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The following listing is intended as an illustration of courses and programs which are typically offered or have been offered recently at Clark. Inclusion in this listing does not constitute a promise or guarantee that the course or program will be available in a particular semester or academic year. Rather, in each semester a wide selection of courses from this catalog will be offered. From time to time new courses, curricula, or instructors may be added or changed. Please consult the *Class Schedule* and *Addenda* to the *Class Schedule* published by the Registrar's Office for a definitive listing of the courses and instructors in each term.

Clark University is accredited by the New England Association of Schools and Colleges, which accredits schools and colleges in the six New England states. Membership in the Association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators.

It is the policy of Clark University that each individual, regardless of race, color, sex, religion, national origin, age, or handicap, shall have equal opportunity in education, employment, or services of Clark University. The University encourages minorities, women, the handicapped, and persons between 40 and 70 years of age to apply.

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793-7676 (Graduate School)

This catalog is published by the Clark Communications Office.

Academic Calendar

1982-1983

FALL SEMESTER

Wednesday, September 1

Registration for new undergraduate students

Thursday, September 2

Registration for preregistered and other returning undergraduates and all graduate students

Friday, September 3

First day of classes*

Monday, September 6

Labor Day, no classes

Tuesday, September 7

Classes resume

Friday, September 10

Last day for graduate students to register

Monday, September 13-Tuesday, September 14

Final registration for all undergraduate students

Monday, November 15-Tuesday, November 16

Spring registration for all continuing undergraduates

Wednesday, November 24

Thanksgiving vacation begins after last class

Monday, November 29

Classes resume

Tuesday, December 14

Last day of classes**

Wednesday, December 15-Thursday, December 16

Saturday, December 18-Sunday, December 19

Reading days

* "University Monday": Monday class schedule in effect

** On Monday, December 13 and Tuesday, December 14, Thursday and Friday class schedules will be in effect to balance out the days lost to the Thanksgiving holiday.

Friday, December 17 and
Monday, December 20–Thursday, December 23
Fall examinations

Thursday, December 23
Winter vacation begins after last examination

SPRING SEMESTER

Monday, January 17
Registration for preregistered and all other undergraduates and
all graduate students

Tuesday, January 18
First day of classes

Friday, January 21
Last day for graduate students to register

Monday, January 24–Tuesday, January 25
Final registration for all undergraduate students

Monday, February 28–Friday, March 11
Senior clearance for degree to be awarded 5/22/83

Friday, March 11
Spring vacation begins after last class

Monday, March 21
Classes resume

Friday, April 15
Last day for theses/dissertations to be handed in for degrees to
be awarded 5/22/83

Monday, April 18–Tuesday, April 19
Fall preregistration for continuing undergraduates

Monday, May 2
Last day of classes

Tuesday, May 3–Wednesday, May 4
Saturday, May 7–Sunday, May 8
Reading Days

Thursday, May 5–Friday, May 6
Monday, May 9–Wednesday, May 11
Spring examinations

Sunday, May 22
Commencement

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About Clark University

A private, coeducational, liberal arts university with a Graduate School and a College of Professional and Continuing Education, Clark is a teaching and research institution at the frontiers of the arts and sciences. The oldest graduate university in New England and the second oldest in the nation, Clark opens the door between academic study and life achievement. The heritage of Clark is rich, providing a foundation on which today's scholars, teachers, and students are building.

Internationally known scholars have worked, taught, and lectured at Clark, and the students of the University have not only come from around the world, but have gone on to become leaders in many fields, in many nations. The influence of the University has been extended through professional journals and societies, including *Economic Geography* as well as the American Psychological Association and the American Physical Society, both founded at Clark.

Some of the names of Clark scholar/teachers are well known beyond the world of academe: Robert H. Goddard, the father of the space age; Hudson Hoagland and Gregory Pincus, coinventors of "the pill"; Albert A. Michelson, the first American Nobel in science; and Franz Boas, the major influence on American anthropology.

Clark today is no less dynamic than it has been in the past. Especially through interdisciplinary programs, students and scholars are examining such issues as alternative energy sources, environmental impacts, the history of the American family, management of radioactive wastes, the hazards of technological growth, the spread of deserts, and the development of the Third World.

The Robert Hutchings Goddard Library is the academic heart of the University and contains more than 400,000 volumes, 50,000 microform volumes, and 2,300 periodicals. Large and small campus facilities—some recently remodeled—are used for theater, music, and dance, as well as art exhibitions. A new student activities center offers facilities for virtually every sport and has a competition-size swimming pool. Campus buildings range from modern dormitories to Victorian era academic and administrative buildings.

Clark features small classes and seminars; close relationships among students, faculty, and administration; exceptionally strong interaction between graduate and undergraduate pro-

grams; and unusual opportunities for independent study. Clark offers the intellectual resources of a respected graduate institution within the context of a small New England school. There are intimate seminar and laboratory settings, student participation in faculty research projects, and a dedicated, inquisitive, intellectual environment. For nearly one hundred years, Clark has held fast to a theme of academic excellence.

The Undergraduate College

The role of Clark University in undergraduate education is that of a small college dedicated to advanced learning within the context of a university. The University's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the college.

An undergraduate education at Clark should have three elements: First, it should provide students with deep and extensive involvement with a specific field of study so that they can experience the meaning of intellectual mastery and can analyze problems in sufficient detail to know the real complexity of things; second, it should develop the broad appreciation of our heritage, and that of other cultures, which is necessary to the liberally-educated person; and third, it should assist students in developing intellectual skills which suit them for a productive and active life.

In the spring of 1973, Clark adopted the university-college concept as the ideal toward which all undergraduate academic planning and program development should be directed. The university-college concept seeks to integrate graduate and undergraduate education, developing in students intellectual competence, personal maturity, and skills in analysis, communication, and critical thinking. Programs are structured so that students assume increasing responsibility for their own learning.

One aspect of the university-college is the Introductory Program, a structured set of courses designed to: supplement introductory-level work in the incoming student's proposed field, acquaint students with skills in critical thinking and knowing that are needed for self-directed learning, and provide a framework within which an incoming student can select an organized pattern of study during the student's first two years in the University. The Introductory Program has two parts: critical thinking courses and perspectives courses.

I. *Critical Thinking*: Every course in the University involves work in critical thinking. However, two types of courses place special emphasis on the cultivation of skills in this area. Each student will be required to take *two* courses, one from each of these areas:

A. *Verbal expression*: A set of courses offered in many different disciplines that place special emphasis on the relationship between writing and critical thinking as practiced in the context of that discipline.

B. *Formal analysis*: A set of courses offered in several departments that place special emphasis on logical and algebraic modes of thinking.

II. *Perspectives*: Each student will be required to take *three* courses (from different departments or programs), one each from three of the following categories:

A. *The Aesthetic Perspective*, which develops visual and aural skills and stresses the perception and expression of form;

B. *The Historical Perspective*, which builds the capacity to understand the contemporary world in the larger framework of tradition and history;

C. *The Natural Scientific Perspective*, which teaches the principal methods and results of the systematic study of the natural world;

D. *The Comparative Perspective*, which studies contemporary human diversity as expressed in geography, language, culture, or political systems; and

E. *The Values Perspective*, which studies the dimension of value in all domains of life and learning.

Each perspective is important in the development of a balanced view, but inevitably students will work in a number of perspectives within a major program. Therefore, the three required perspectives courses should be selected from categories that differ from the perspectives dominant in the student's proposed major field. A list of the courses in each perspective will be available at registration.

A major at Clark involves study in one of the various departmental and interdepartmental programs of the college and results in the bachelor of arts degree. The undergraduate major is a program of study anchored in a particular discipline but specifically structured to include courses in related disciplines. This concept recognizes that breadth of knowledge must be

maintained and achieved concurrently with specialization. Particular attention is placed on the interrelation of the major programs within the University and on early research opportunities.

A major consists of from 12 to 19 courses taken from those designated by the department. No department may require a student to take more than 19 courses in the major, but a student may take more than 19 courses if he/she meets the other requirements for graduation.

Academic Programs

Traditional majors are offered in art (art history, studio arts, or fine arts, the latter two being offered through the Clark University School of the Worcester Art Museum), biology, chemistry, economics, English, foreign languages (French, German, Spanish, romance languages, or a self-designed combination), geography, government and international relations, history, mathematics, music, philosophy, physics, psychology, sociology, or theater arts. Interdisciplinary majors are offered in biochemistry; business/management; comparative literature; computer science; international development and social change; and science, technology and society. Formal concentrations are offered in American studies, education, Judaic studies, screen studies, and women's studies; in addition, courses are offered in astronomy, classics, environmental affairs, geology, linguistics, and Russian, but departmental majors for bachelor degree candidates are not available in these fields. Detailed descriptions of all majors and programs can be found under the departmental listings.

Any student can design his/her own major focusing on a body of knowledge not within the bounds of existing majors or departments. With the advice of an advisory committee of three faculty members, the student establishes a major program, which must be approved by the Undergraduate Academic Board. Student designed majors must include a balance between upper and lower division courses and be approved no later than the start of the second semester, junior year.

INTERDISCIPLINARY DEPARTMENTAL MAJORS

BIOCHEMISTRY

The biochemistry major at Clark provides a comprehensive foundation in all areas of this contemporary discipline. A small, selective program, it serves students with basic interests in health-related sciences. Those who are attracted to biomedical laboratory technology or medical school will find this program

and its strong instrumental and biophysical emphasis valuable. For more information, refer to the departmental listing.

BUSINESS/MANAGEMENT

Two options are available to undergraduates interested in a business/management program:

1) *The Business Management Major.* Students interested in a management career in a profit or nonprofit organization (business, government, education, healthcare delivery systems, religious institutions, etc.), and who wish to explore job opportunities after graduation, deferring their graduate studies, should consider majoring in business/management. The program draws upon a variety of disciplines, integrating them into a program that is practical as well as broadly educational. For more information, refer to the management listing.

2) *The Five-Year B.A./M.B.A. Program.* For students who plan to pursue a master in business administration after their undergraduate work, this program offers an opportunity for accelerated graduate study. A select group of students are permitted to enroll in graduate management courses during their senior year, thereby enabling them to complete the M.B.A. in one year beyond the undergraduate degree, rather than the usual two years. Five-year B.A./M.B.A. students do their B.A. work in a field other than business/management (e.g., economics, psychology, government) and take related courses or electives to prepare them for graduate work in the senior year. They receive their B.A. after the senior year and the M.B.A. after the fifth year. For more information, refer to the management listing.

In addition to these undergraduate programs, the Graduate School of Management offers a Master of Business Administration Program and a Master of Health Administration Program which is offered in conjunction with the Department of Family and Community Medicine of the University of Massachusetts Medical School. Students may enroll in either program on a part- or full-time basis. For more information, refer to the management listing.

COMPARATIVE LITERATURE

This major allows the student of literature to transcend the boundaries of any one national literature, period, or genre. Comparative literature students are encouraged to combine such areas as philosophy, visual and performing arts, psychology, and history with their specific interests in language and literature. For more information, refer to the departmental listing.

COMPUTER SCIENCE

The computer science major at Clark is designed for the education of computer scientists with special skills in program-

ming, software, and systems design. The basic goal of the major is to produce a sophisticated user of the computer who is able to apply his/her expertise in other areas. For more information, refer to the listing for the Department of Mathematics and Computer Science.

INTERNATIONAL DEVELOPMENT AND SOCIAL CHANGE

The International Development and Social Change Program focuses on questions of equity, growth, and development at a time when Third World countries are exerting increasing influence in the world's economic, political, and social systems. Intended to serve students from the developing world and the United States, the program provides a forum for diverse perspectives. Its hallmark: a unique combination of academic training and field research. Not only are students made aware of broad issues in international development, but they are trained in the basic skills of resource management and social and economic analysis. Many prepare for careers as planners, managers, and educators in public and private organizations that deal with the world's developing nations; others choose further study in graduate and professional schools. For more information, refer to the departmental listing.

SCIENCE, TECHNOLOGY AND SOCIETY

Clark is one of only a few universities in the country to offer an undergraduate major in the interdisciplinary field of science, technology and society. The Science, Technology and Society (STS) Program is designed for students who hope to contribute to the solution of complex societal problems in areas such as energy, environmental protection, and control of technological hazards. Degree requirements emphasize a firm grounding in natural science coupled with considerable exposure to social science/public policy perspectives, both derived from coursework in traditional departments.

The program itself offers some 15 problem-oriented courses on a regular basis, as well as a variety of special project and internship experiences (often in conjunction with research being conducted at the University's Center for Technology, Environment, and Development). These courses and projects serve not only STS majors but also science and math students, who often diversify their studies by taking an STS elective or even becoming a double major with STS. For more information, refer to the departmental listing.

INTEGRATED UNDERGRADUATE-GRADUATE PROGRAMS

To help bridge undergraduate and graduate education, Clark has established several integrated programs that allow students to complete requirements for bachelor's and master's degrees at an accelerated pace. Because undergraduates are granted

admission to these special programs before receiving their undergraduate degrees, they can begin to fulfill advanced degree requirements during their junior and senior years.

Each bachelor's/master's degree program is career oriented and spans several disciplines; each provides participants with the knowledge and skills needed for entry-level professional positions, and normally covers a three-year span, beginning in the junior year and leading directly to a master's degree. The bachelor's degree is awarded en route to the master's. The programs provide students with the knowledge and skills to enter a profession directly or to continue in a Ph.D. program elsewhere, emphasizing interdisciplinary education based on a common core of course work and opportunity for individual professional interests. *Formal application for admission to these programs is required, usually after the sophomore year.* Transfer students interested in making application to these programs should direct inquiries to the Admissions Office.

The University has approved programs of this type in environmental affairs, international development and social change, and management. A five-year program leading to a master's degree in public administration is in the final stages of development. In addition, the Department of Geography offers a five-year B.A./M.A. program and a seven-year B.A./Ph.D. program open to a limited number of highly qualified students.

Eventually, other integrated undergraduate-graduate programs will be added until a network of such programs is available as a broad set of options in the university-college. Descriptions of available programs are included within departmental listings.

SPECIAL OPPORTUNITIES FOR STUDY

THE EXTENDED UNIVERSITY

Since Clark is a member of the Worcester Consortium for Higher Education, students may enroll for one course each semester at Anna Maria College, Assumption College, the College of the Holy Cross, Worcester Polytechnic Institute, Worcester State College, University of Massachusetts Medical School, or Becker, Quinsigamond, and Central New England Colleges.

Over four thousand students have cross-registered under the consortium arrangement since 1968. Through the "extended University" Clark students immediately have available to them increased programs and course options. All of this is available at no extra charge to students.

Students from Holy Cross, Worcester Polytechnic Institute, and Clark University have worked together on a water pollution project; consortium students have been involved in a lead-paint testing program; engineering students from Worcester

Polytechnic Institute, Massachusetts Medical School, and Quinsigamond Community College have worked with Clark students as a research unit for the Worcester Department of Public Health to conduct an infectious disease study. A health studies option, which arranges student internships in health care organizations and internships with research scientists in laboratory settings, is available through the "extended university" as defined by the Worcester Consortium. A music option also is available to stimulate intercollegiate participation in performing groups, to encourage cross-registration in music courses, and to make available concentrated study for students with extensive music backgrounds. Courses taken at consortium institutions should not duplicate those taught at Clark. Approval of the department chairman or, where necessary, the dean of the college is required. Students enrolled in the day college may not enroll independently at other consortium institutions and receive Clark credit. To help students select cross-registration courses, the Consortium Office compiles a master course list by subject. This list appears prior to registration and is available in the Registrar's Office.

WRITING AT CLARK

Emphasizing the need for writing throughout the curriculum, Clark offers interdisciplinary, departmental, and special Writing Center programs. The required freshman Verbal Expression Program offers courses in several disciplines, including art, English, history, linguistics, philosophy, screen studies, and science, technology and society. In many of these courses, class work is supplemented by peer writing groups. Beyond the freshman course, departments such as English, History, and Biology offer courses in basic, intermediate, and advanced expository writing as well as in science, social science, and creative writing. Supplementing the curriculum, Clark's Writing Center provides individual tutoring and noncredit workshops for all interested students. Writing Center offerings are not limited to remedial work, but are flexibly designed to help students at all levels achieve clear, correct, graceful writing.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special project courses, which may be entered with the permission of the instructor concerned. Directed Readings courses comprise a sequence of structured readings on a given topic approved and directly supervised by the instructor. Special Projects courses involve independent research by the student on a particular problem, as in laboratory work or field study. Both types of courses are offered for variable course credit but not to exceed a full course except by petition to the College Board. Students may take up to two full course credits in Directed Readings,

Special Projects, or some combination of the two in a given one-semester period. There is no limit on the total number of such courses that may be counted toward the B.A. degree.

NONTRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (*e.g.*, internship experiences, off-campus research, study at nonaccredited institutions) are eligible for course credit. To qualify, an experience must involve an extension, embodiment, or illustration in some significant way of previous or concurrent systematic academic work. It must take place under competent supervision, and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student *prior* to the beginning of the experience. Course credit will not be given for work that duplicates previous course work or other prior educational experiences. Students seeking additional information should contact the dean of the college.

INTERNSHIPS

The Clark University Internship Program offers qualified students the opportunity to spend a semester working off campus, full- or part-time, as an extension of the academic curriculum. Having undertaken sufficient coursework in a related discipline, the student may choose—from a large number of agencies offering internship placements—a position that will allow him/her to perform extended work in that discipline while testing areas of potential career interest. Academic credit will be awarded those internships which take place under the supervision of qualified agency sponsors and are evaluated by appropriate Clark faculty members.

JOB LOCATION AND DEVELOPMENT

The Job Location and Development Program, a federally-subsidized facet of the College Work-Study Program, is a referral service designed to assist students looking for part-time and summer employment. The office, located on the third floor of 18 Downing Street, maintains a listing of jobs available in the greater Worcester area. Interested students are registered, screened, and referred for the consideration of participating employers. Although the service operates under the auspices of the Financial Aid Office, it is available to all currently enrolled Clark students, regardless of financial need.

INTERNATIONAL PROGRAMS

Clark University is committed to encouraging a stronger Clark presence abroad and a stronger international presence at Clark. The International Programs Office handles both areas.

Clark-sponsored Junior Year Abroad Programs are presently

available on a competitive basis to qualified students who wish to study at: the University of Sussex, Sussex, England; University of Dijon, Dijon, France; Trier University, Trier, Germany; and at ITESO in Guadalajara, Mexico. Clark now has an internship program in London (either semester) and an internship program with the West German Federal Parliament (fall semester). Students who study abroad on a Clark program pay regular tuition and fees to Clark. Clark assumes responsibility for the students' academic programs and normal living expenses for the academic year, including airfare.

Clark University has exchange relationships—for students and faculty—with Trier and Dijon and expects to expand these relationships in the coming years and to create new ones with other universities.

Up to four units of credit may be earned during a semester abroad and up to eight units during a full year. The International Programs Office also provides services for international students at Clark. These services include information, advising, and hosting of social events. For further information contact the Office of International Programs located at 18 Beaver Street, 752-4606.

WASHINGTON STUDIES PROGRAM

Clark participates in the Washington Semester Program of the American University in Washington, D.C. and the Washington Center for Learning Alternatives Internship Program.

Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Although any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government and international relations, history, economics, or sociology. Inquiry and application should be made to the chair of the Department of Government and International Relations for the Washington Semester Program and to the deputy director of the International Development Program for the Washington Center for Learning Alternatives Internship.

DIPLOMA PROGRAM IN STUDIO ART

In 1981, Clark University's Department of Visual and Performing Arts incorporated the eighty-three-year-old professional school of the Worcester Art Museum, expanding studio art faculty and facilities and increasing studio art program offerings. The department now offers, in addition to B.A. and B.F.A. degree programs, a diploma program in studio art. For details, refer to the program descriptions listed under Studio Art, Department of Visual and Performing Arts.

PREPROFESSIONAL PROGRAMS

Clark University recognizes that there is no fundamental incompatibility separating liberal arts education and professional preparation. In that spirit Clark offers a bachelor of fine arts degree, work in management, computer training, and courses in education, all within a liberal arts context. In addition, Clark has identified concentrations preparatory to careers in law and medicine.

Students interested in law school are advised to plan a broadly-based academic program, which is liberal in character and has adequate samplings drawn from the natural and physical sciences, social sciences, and humanities. While there is no specific major or constellation of courses recommended for all prelaw students, it is important that the courses selected lead toward the development of certain skills: (1) *Communication and articulation skills*: courses in composition, creative writing, as well as courses in history, philosophy, government, and other fields in which the ability to read and write well is stressed; (2) *Quantitative analysis and graphic presentation*: courses in mathematics, computer science, economics, and geography, which help develop the ability to compile, understand, and interpret data and to present and analyze it in graphical form; (3) *Logic*: the study of law requires the systematic analysis of propositions and of the conclusions that can be drawn from them; all courses that provide training in this skill are highly desirable; (4) *Critical understanding*: courses in ethics (philosophy), history, sociology, and other social sciences that promote understanding of human institutions and values are recommended.

In general, the records of students applying to law schools will be evaluated according to several criteria: (1) the overall quality of grades, (2) the breadth and distribution of courses, and (3) evidence of advanced learning and scholarship.

Students who are interested in prelaw are urged to consult the members of the Prelaw Advisory Board and the prelaw *Handbook*, available in the Office of Career Planning and Placement.

Students interested in premedical or predental programs may major in any of the sciences, social sciences, or humanities, but must complete—normally before the end of the junior year—at least the minimum requirements for admission to medical and dental schools: one year each of introductory chemistry, biology, physics, and organic chemistry (all with laboratories), and one year of English and calculus. A semester of psychology is also strongly recommended or required by most medical or dental schools. Although there is considerable variation, some medical and dental schools encourage students to take courses in quantitative analysis, physical chemistry, and advanced biology. Proficiency in quantitative reasoning, communication

skills, and reading comprehension must also be developed, and a broad liberal arts background is helpful toward that end. In selecting their courses and planning their programs, students are urged to consult members of the Premedical and Predental Advisory Committee and the *Guide for Students Planning to Enter Medical or Dental School* compiled by the committee. Copies of the *Guide* and other materials pertaining to premedical, predental, and other health-profession education are available in the Office of Career Planning and Placement.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

Course requirements: Credit toward the bachelor of arts degree is expressed in terms of courses. A one-semester course normally involves two 75-minute or three 50-minute class meetings per week and three to four hours of laboratory per week, when applicable. A course may be offered at half-strength or double-strength intensity over a half-semester. Normally each semester course is equivalent to one unit (four semester hours). Thirty-two units plus satisfactory completion of institutional and major requirements are necessary for the bachelor's degree.

Minimal academic performance: To graduate with the B.A. degree, a student must receive passing grades in the 32 full courses required for graduation; he/she must receive a C- or better in at least 24 of these courses. Equivalencies for students with fewer than 32 courses in residence will be established by the College Board.

For the purpose of transfer, a full course is equivalent to four semester-hours credit.

RESIDENCE

To earn a bachelor's degree at Clark a student must earn at least one half the total number of course units for the degree and at least one half the total number of course units taken for fulfillment of a major as *residential* credit. Residential credit is defined as credit earned through courses taught in the college. External credit is credit earned in the following categories:

1. Advanced placement and transition programs.
2. Summer school credit taken after matriculation at Clark. Such credit will be applicable to a Clark degree only when *approved in advance and in writing by the registrar*. Approval is generally restricted to making up course deficiencies or pursuing unique educational opportunities.
3. Credits transferred from other American colleges and universities.

4. Credit earned in foreign study programs administered by American or foreign institutions of higher learning other than Clark.
5. Cooperative Programs (e.g., Washington Semester, Dijon, Guadalajara, Quebec, Bonn, Sussex, or Trier).

The amount of (external) credit that can be applied to a bachelor's degree at Clark is limited by category.

1. No more than one semester (4 units) may be granted in advanced placement (A.P.). A.P. credit is defined as 2 units of degree credit assigned for a score of 4 or 5 on a CEEB A.P. examination.
2. No more than three semesters (12 units) of other external credits may be awarded to already matriculated students. No more than one of these three semesters (4 units) may be taken in summer courses.
3. Eight of the last sixteen units must be completed at Clark.

DECLARATION OF THE MAJOR

A student must declare his/her major no later than the start of the second semester, sophomore year. Changes in major after this point are possible but may prolong the undergraduate experience. During the freshman year, students are encouraged to seek faculty advice and give careful attention to their future program of study.

Academic Regulations

The undergraduate normally carries a full program of four courses per semester. Students should consult with faculty or with major departments when questions about course or program selection arise.

Freshmen and sophomores may choose any course designated by the department as open to them. Freshmen and sophomores are admitted to 200-level courses only with permission of the instructor and the department chairman concerned, to whom the student must present evidence of high class standing and/or adequate preparation.

Juniors and seniors may elect any 100- or 200-level course; course selection by juniors and seniors is subject to conditions stated in course descriptions.

Undergraduates may be admitted to 300-level courses (courses primarily for graduate students) with the approval of the dean of the Graduate School.

RESERVE CREDIT

Full-time^{1/2} students who are in good standing* and who are in at least their second consecutive semester may enroll for an extra course, designated as a "reserve credit" course, for no

additional charge. Reserve credit courses are in addition to the normal 8-course-per-year load, normally cannot apply toward a major, and do not meet residency requirements. These courses are primarily for enrichment.

Reserve credit courses may also be used to make up credit deficiencies as follows:

- 1) One reserve course may be used to make up a fractional transfer award.
- 2) One to four reserve credits may be used to make up course deficiencies accrued at Clark as a result of no records and withdrawals. Deficiencies will be judged on the basis of a student's cumulative record after seven semesters of full-time study or the equivalent.
- 3) No more than four reserve credits may be applied toward a degree.
- 4) Ordinarily, transcript evaluation and the application of reserve credit will occur only during the senior clearance in a student's eighth semester or its equivalent.
- 5) Registration for reserve credit courses is by special reserve credit add slip. Reserve courses are graded and apply toward grade point averages.

* That is, not on academic warning or probation.

GRADES

Grades are an indication of individual performance in each course taken in the college. At Clark three grading patterns are currently in use:

1. *Standard letter grades with no record of unsatisfactory work:* This pattern uses the symbols A,B,C,D,NR with the modifying symbols "+" and "-" for A, B, and C.
2. *The Pass/No Record Option:* This pattern uses the symbols P, NR. P indicates work at a level of C- or better.
3. *The Credit/No Record Option:* This pattern uses the symbols CR/NR. CR indicates work at a level of C- or better.

Option three (credit/no record) applies to a course as a whole and is invoked by an instructor or department with the approval of the Undergraduate Board. This option is invoked for courses in which traditional grading schemes are judged to be inappropriate to the subject matter or method of instruction. Reports on the work of each student are made out at the end of each course. All courses in which a student receives NR do not appear on the student's permanent record.

The faculty has approved the following qualitative description of grades:

- A indicates work of distinction, of exceptionally high quality
- B indicates good work, but not of distinction
- C indicates satisfactory work

D indicates marginal work
NR indicates unacceptable work

INCOMPLETES

A record of incomplete may be permitted by approval of the College Board or deans of students only when sickness or some other unavoidable circumstance prevents completion of the course. *Individual instructors may not assign incompletes without the approval of the College Board.* A record of incomplete incurred in the first semester must be made up no later than the following April 1; if incurred in the second semester, it must be made up no later than the following October 1. *If a course is not completed within the specified time, the record of incomplete is changed to NR.*

EXAMINATIONS

Final examinations are given at the end of many courses. Approximately one week is set aside for each examination period, and an attempt is made to distribute examinations for individual students evenly throughout this period. Absence from a final examination, except for the most compelling reasons, may result in an NR in the course. Final exams (take-homes) are not to be given (or to be due) during the last week of class or the scheduled reading period. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The University has no class attendance requirements; however, instructors have the prerogative of establishing such requirements for their own courses.

REGISTRATION

Every student registers for courses at the beginning of each semester. Notification of the dates for registration is given, and failure to register within the announced period results in a late fee.

ELECTION OF THE PASS OPTION

The availability of the "pass" option (P) in virtually all courses is designed to help minimize the competitive aspects of grading for those who find competition detrimental to learning. Some students may wish to elect a number of their courses on this basis.

All students should remember that the great majority of graduate and professional schools have expressed a preference for graded transcripts and encourage applicants to have many graded courses. Pre-professional students and those for whom graduate school is a goal should exercise caution in employing the "pass" option. Students who are interested in attaining honors, such as Phi Beta Kappa

and general course honors at graduation, also should exercise the option cautiously.

RESTRICTION OF OPTION

A department may, with the approval of the Undergraduate Academic Board, restrict the grading option for its majors in the major program.

NONCREDIT AUDIT STATUS

Full-time degree students are eligible to register as auditors in any course with the permission of the instructor. There is no additional charge for this privilege. Part-time students also may register as auditors with the permission of the instructor and the payment of \$260 per course during the academic year 1982-83. In limited or sectioned courses, regularly enrolled Clark students are given preference for available openings.

Matriculated students who successfully complete audited courses (this determination is made by the instructor) will have the audited courses posted on their permanent records.

Note: Records for nonmatriculating auditors are kept for only the semester in attendance. Transcripts are not issued for audited courses.

WITHDRAWAL FROM COURSES

A student may withdraw from any course at any time during the first four weeks of classes (regardless of the grade thus far attained in that course) providing that, after withdrawal, he/she is carrying no fewer than three courses. Withdrawal from a course after the fourth week of classes constitutes withdrawal from an enrolled course and does not permit the student to substitute his/her enrollment pattern as explained in "Normal Program and Course Variance" (page 20). Withdrawal from courses during the last two weeks of classes requires the permission of the College Board.

COURSE CHANGES

A student may enter a course without special permission (unless such permission is required) any time up to final registration at the end of the first week of classes. After the first week, a student may enter a course with the permission of the instructor up to four weeks after the beginning of classes in a semester-length course. Thereafter, a student may enter a course only with the permission of the instructor and the College Board.

CLASSIFICATION OF STUDENTS

All students who have not been required to withdraw at the end of the academic year will be promoted if they have satisfactorily completed the following number of courses.

To the sophomore class	6 courses
To the junior class	14 courses
To the senior class	22 courses

PARTIAL PROGRAMS

In special circumstances, students may be permitted by the deans of students to register for a semester program of less than three courses. These students are designated as part-time students.

GUEST AND SPECIAL STUDENTS

The University provides for guest students from other colleges and universities who wish to study at Clark for one or two semesters and for special students who wish to take only a few courses without enrolling as degree candidates. Students enrolled as guest students should contact the Admissions Office. Persons interested in special student status should contact the registrar.

DISMISSAL

A student whose accumulated courses at the end of one semester are fewer than three (or fewer than two and one half in the case of a freshman) will be reminded by the dean that she or he is in jeopardy of being required to withdraw. The student may be required to withdraw from the college by failing to complete successfully five courses during freshman year and six courses each year thereafter. Students who are required to withdraw ordinarily will not be eligible for an Alumni and Friends Scholarship for the first semester of their return to the University. Students who meet demonstrated need and Federal eligibility requirements may apply for available loan and job funds. The Financial Aid Office will reinstate scholarship funds after successful completion of one semester.

PROBATION

Students who do not maintain academic good standing or who violate academic integrity may be placed on academic probation by the College Board. Students on academic probation are ineligible for reserve course registration, and their progress is subject to regular review by the deans of the College Board.

ACADEMIC INTEGRITY

Academic integrity is a basic value for all higher learning. Simply expressed, it requires that work presented must be wholly one's own and that all direct quotations must be identified by source. Academic integrity can be violated in many ways: for example, by submitting someone else's paper as one's

own, cheating on an exam, copying a computer program, altering data in an experiment, or quoting published material without proper citation of references or sources.

To insure academic integrity and safeguard students' rights, all suspected violations of academic integrity should be reported to the College Board. Such reports should be carefully documented, and students accused of the infraction notified of the charge.

LEAVES OF ABSENCE

A student who is in good standing may apply to the deans of students for a leave of absence, after which he/she may return to the University without formal application for readmission.

Honors and Awards

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under the plan, the department appoints an honors adviser who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of six courses in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major departments for permission to take honors work, not later than May 1 of the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work.

Admission to an honors program does not relieve the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he/she has not maintained a standard satisfactory to the department in which the honors work is being done.

The department may recommend the student's graduation with honors, high honors, or highest honors; such recommendation occurs at the conclusion of the honors program.

ANNUAL HONORS

In June of each year, the College Board publishes a list of students who have distinguished themselves by outstanding academic performance in the preceding year. Honors are awarded to the top students in each class based on annual grade average.

COURSE HONORS

General course honors are awarded at three levels: *cum laude*, *magna cum laude*, and *summa cum laude*. Honors are determined by the College Board on the basis of eight semesters' work or its equivalent. Criteria, such as grades, percentage of courses taken on P/NR and graded basis, and number of courses at Clark, are used for determining the awarding of general honors. Ordinarily three quarters of a student's record at Clark must be graded if he/she is to be eligible for general honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in programs that are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity.

Tuition and Other Charges

SUMMARY OF TUITION AND OTHER CHARGES

FIRST AND SECOND SEMESTERS

ACADEMIC YEAR 1982-83

Tuition	\$6,980
Health Fee	90
Room:	1,150
Dormitory double room	1,150
Dormitory single room	1,550
Dormitory triple room	1,050
University house double room	1,215
University house single room	1,590
University house triple room	1,100
Board (19 meals \$1,280, 10 meals \$1,060, 5 meals \$750)	1,280
Student Activity Fee	<u>116</u>
SUB-TOTAL for continuing students:	\$9,616
Charges that apply to new students only:	
Contingency Deposit	\$ 30
Orientation Fee	<u>70</u>
TOTAL	\$9,716
OTHER FEES	
Health and Accident Insurance (optional)	\$135
Application Fee (undergraduate)	25

Transcript (No charge for the first one,
\$1 per transcript for requests
made in senior year)

2

DEPOSITS:

Admission Deposit	\$100
Tuition Deposit (upperclassmen)	200
Dormitory Deposit	100

Note: Costs are subject to change from year to year.

GENERAL INFORMATION

Tuition, board, dormitory charges, and certain fees are due and payable prior to the beginning of each semester. The dates for 1982-83 are: August 15, 1982 for Semester 1 and December 15, 1982 for Semester 2. Students are not permitted to register for any semester until all financial obligations have been arranged satisfactorily with the University.

There is a *late* fee of \$25 assessed against all accounts not paid in full by the August and December due dates. In addition, *interest* at the rate of 1½ percent per month (annual rate, 18 percent) will be charged on all balances (including tuition deposit) 30 days or more past due.

REFUND POLICY

Withdrawals are arranged in the Dean of Students' Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 percent on tuition; during the second week, 60 percent; during the third week, 40 percent; during the fourth week, 20 percent; after the fourth week there is no refund. The activities fee is refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the University.

When a student has left, but not withdrawn from, the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above.

NORMAL PROGRAM AND COURSE LOAD VARIANCE

A normal full-time academic program is eight course units per year (four course units per semester). Students may elect to vary this pattern by taking three, four, or five course units during the fall or spring semester, and the remaining course units in the other semester. This option is available only during the full academic year (September through May), when the combined year program will equal eight units. One half year tuition will be billed for any pattern of three, four, or five courses.

Seniors in their last semester will be expected to take the necessary number of units (up to five) for their degree. Seniors in their last semester will be billed on a per-course basis at the rate of 1/8 of the normal year's tuition per course. Full-time freshmen or transfer students, in their first semester at Clark University, must enroll in a four-course program. Students re-entering the University, or returning from leaves of absence, also must enroll in a four-course program during their first semester.

ORIENTATION FEE

A fee of \$70 is assessed all new students to cover food and other related costs during orientation.

CONTINGENCY DEPOSIT

All undergraduates are required to pay \$30 deposit to cover minor charges, such as property damage, which may be incurred during the year. Students are billed each year for whatever charges are incurred; the balance is refunded upon completion of studies.

DORMITORY DEPOSIT

A dormitory deposit of \$100 is required of upperclassmen each spring to reserve a place in a dormitory. It is credited toward dormitory charges, but may be withheld to cover damage costs. The deposit is *forfeited* if the student does not enroll for the specified semester.

APPLICATION FEE

A fee of \$25 must accompany the application for admission to the college. It is *not refundable*.

STUDENT ACTIVITY FEE

A fee of \$58 per semester, levied and administered by the Student Council, is required of all matriculated undergraduates. It pays for admission to and participation in a wide range of cultural and recreational activities.

ADMISSION DEPOSIT

For entering students planning to live on campus, a nonrefundable admission deposit of \$100 *and* a housing deposit of \$100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the \$100 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark. Deposits are *forfeited* if the student does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of \$200 is required of all students planning to return to the University for their sophomore, junior, or senior years.

It is payable by July 1 and is credited toward charges for the fall semester; \$100 of the deposit is forfeited if the student does not enroll for the specified semester.

IDENTIFICATION CARD

Identification cards are issued each year to all students without charge. This card is an official college identification and should be carried at all times. Loss should be reported immediately to the Campus Police. There is a \$5 replacement charge for lost I.D.s

KEYS AND KEY SECURITY

Room keys, mailbox keys, and dormitory access cards will be issued upon a student's arrival at Clark, and it is mandatory that they be returned before the student leaves campus at the end of the academic year. The following charges will be assessed to those students who fail to return their keys and dormitory access card within 30 days after the close of school: \$30 for the room key, \$5 for the mailbox key, and \$10 for the dormitory access card.

CLARK UNIVERSITY TUITION BUDGET PLAN

The University offers a budget plan designed for families who find it more satisfactory to budget college costs from monthly income as opposed to the traditional twice yearly payment system. Under this plan, annual college charges are divided into 10 consecutive monthly payments. The initial payment is due in May and the final payment will be due in February of the following year. The only fee for participation in this plan is \$40. This fee includes the cost of automatic life insurance coverage guaranteeing payment of the balance of the budgeted amount to Clark University in the event of the death of the insured parent. This program is administered for Clark University by Academic Management Services in Pawtucket, Rhode Island. Information regarding this plan is mailed to all students who are offered admission to the University.

Student Services

ORIENTATION

All new students are expected to attend the orientation program at the opening of their first semester. This program helps students plan a course of study and familiarizes them with the Clark and Worcester communities. While the emphasis is on academic advising and placement, orientation also facilitates personal and social adjustment.

ADVISING

The faculty, administration, and staff are regularly available to all Clark students for appropriate advising. Questions are resolved by individual conferences and sometimes through group meetings. Students may choose (and change) faculty advisers; these advisers assume primary responsibility for the academic guidance of declared majors.

Freshmen are not assigned individual advisers their first year. However, they have access to the faculty who work in the orientation program, and who are familiar with the Introductory Program.

Freshmen are encouraged to take a variety of courses and to discuss their programs of study with professors teaching their classes and with those affiliated with the freshman advising programs.

HOUSING

Clark University provides housing for approximately 1200 students in both coeducational and single sex dormitories and houses. Single freshmen not living with their families are expected to live on campus and can usually choose dormitories where the majority of residents are either freshmen or upperclassmen. Transfer students must apply for housing, which is assigned on a space available basis.

Upperclassmen generally have first choice if living in University-owned accommodations, or they may move off campus into private apartments.

Rooms are assigned by the director of housing prior to the arrival of new students, and requests to live on campus, when honored, are considered binding for the remainder of the academic year as long as the student is registered.

DINING HALLS AND MEALS

Dining halls in Dana Commons and Jefferson Hall are operated for the convenience of the Clark community and guests. Service is cafeteria style, and students select from a variety of plans with respect to both the number of weekly meals and particular dietary needs, such as kosher or vegetarian. "The Locker Room"—a casual gathering place for food, drink, socializing, and entertainment—includes snack and juice bars, game and TV rooms, and a rathskellar.

HEALTH SERVICE

The Clark University Health Service is a primary care outpatient clinic which provides on-campus health care to matriculated (day college) students. It is staffed by family practice physicians from the Hahnemann Family Health Center, nurse practitioners, and a registered nurse. The clinic, located on the first floor of Wright Hall at 30 Downing Street, is open Monday

through Friday 9 a.m.–5 p.m. There is always a physician on call when the Health Service is closed.

Students may make an appointment at the Health Service—with either a physician or a nurse practitioner—for diagnosis, treatment, follow-up, or counseling regarding health problems. Gynecological and contraceptive services are available.

The Health Service staff has a holistic approach to health problems. Emphasis is placed on prevention, wellness, and health education. Staff members consider their roles to be congruent with, and an integral part of, the educational process.

Before registering for courses, all students are required to demonstrate adequate medical insurance coverage, through either a family policy or the Clark University Student Health Insurance Plan.

PSYCHOLOGICAL SERVICES

The Clark University Psychological Services Center offers psychodiagnostic, psychotherapeutic, and referral services to members of the Clark community. Administratively the center is part of the Department of Psychology and is a training agency for graduate students in clinical psychology. A significant portion of the center's work is done by graduate students under supervision of several faculty-staff members who are clinical psychologists. A brochure describing the center and its services may be obtained at the center's main offices in Room 301 of Jonas Clark Hall.

OFFICE OF CAREER PLANNING AND PLACEMENT

The Office of Career Planning and Placement is a resource to which students are encouraged to turn for individual assistance in working through the relationships between undergraduate study, personal values and goals, and postcommencement options.

Students and alumni of the University may use the services of the Office of Career Planning and Placement: (1) a library of graduate and professional school catalogs and a variety of directories and program listings available to students in their search for desired fields of graduate/professional study; (2) extensive information about career possibilities of interest to Clark students, extending from traditional fields of endeavor to new, developing, and nontraditional career areas; (3) strong support for students in their senior "job-search" process, including directories of organizations that are potential employers in many fields, help in the process of resume-writing, and a resume-mailing service; and (4) professional help in these specific services by means of informal conversation, interest surveys, and counseling.

Athletics and Recreation

Athletic programs are designed to stimulate and encourage students to wider participation in physical activities, promote health and mental efficiency, and lead to continuing participation throughout life. Participation is voluntary.

STUDENT ACTIVITIES CENTER

Clark has a modern student activities center, which houses all male and female athletic and recreational programs. The center has a central gymnasium with three full-size basketball courts, three volleyball courts, three tennis courts, eight badminton courts, a jogging track, and a setup for gymnastics. There is a 6-lane, 25-yard pool with 1- and 3-meter diving boards. There are four handball/paddle racquet courts, two squash courts, and areas designated for weight training, voluntary physical education, exercising, crew, and dance.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a well-defined and strong interest in athletic competition, intercollegiate schedules are arranged for men in soccer, cross-country, golf, baseball, and track; for men and women (separately) in basketball, crew, tennis, and swimming; for women, softball, volleyball, and field hockey. Additional intercollegiate competition may be arranged as student interest warrants.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, the New England College Athletic Conference, and numerous sports associations. Clark is an N.C.A.A. Division III school and typically competes with the following Division III, Division II, and Division I schools: Amherst, Williams, Brandeis, Tufts, M.I.T., Bates, Bowdoin, Colby, Middlebury, Coast Guard, Assumption, Holy Cross, W.P.I., Springfield, Yale.

INTRAMURAL ATHLETICS

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, table tennis, racquetball, softball, soccer, and squash.

VOLUNTARY PHYSICAL EDUCATION PROGRAM

Individual and group no-credit classes are offered each semester in ballet, jazzercise, body awareness, folk dancing, jazz

and modern dance, yoga, karate, instructional racquetball, squash, tennis, judo, weight training and conditioning, and fencing.

COEDUCATIONAL RECREATIONAL ATHLETICS

Students may participate in coeducational and recreational leisure-time activities including archery, badminton, basketball, fencing, golf, guitar, horseback riding, sailing, swimming, tennis, softball, volleyball, and in several dance activities, including folk, square, and modern dance. The same activities are available to men's and women's groups. (Off-campus arrangements must be made for golf, sailing, and horseback riding.)

CLUB SPORTS

Various organizations have evolved in order to allow students to continue participating in an activity in which they have a strong interest. The clubs that are jointly funded by the Department of Athletics and the student council currently include: ice hockey, lacrosse, women's soccer, men's volleyball, bowling, skiing, outing, horseback riding, power weight lifting, sailing, bando-karate, squash, and racquetball.

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women without regard to race, color, religion, age, national origin, financial condition or presence of any handicap. Selection is competitive and based primarily on academic promise as indicated by secondary school performance, recommendations, and Scholastic Aptitude Test scores. Secondly, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 acceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the freshman class. Such preparation typically includes four years of English; two or more years of any foreign language studied; two or more years of mathematics (three or more for those planning a science or mathematics major); at least one year each of social studies and natural science (more laboratory work for those planning a science major); and other credit electives, including the arts, recognized in the secondary school curriculum.

ADMISSION TESTS

Applicants for freshman admission in September should submit the results of the Scholastic Aptitude Test (SAT) administered by the College Entrance Examination Board no later than January. Three Achievement Tests are recommended: Two may be elective; one should be the English Composition Examination.

REGULAR ADMISSION

Candidates for freshman admission in September should initiate their applications as early as possible, usually during the first semester of the final year of secondary school, and no later than February 15. The deadline for admission at midyear is December 1. A nonrefundable fee of \$25 must accompany each undergraduate application unless a waiver is being requested. Clark participates in the Common Application Program and accepts photocopies of the appropriate forms, which are distributed to secondary schools.

EARLY ADMISSION

Exceptional students are invited to apply for early admission when encouraged and supported by enthusiastic recommendations from their secondary schools.

EARLY DECISION

As a service to students for whom Clark is clearly first choice, Clark has established an Early Decision Program. Applications in writing for an early decision may be submitted anytime until January 15. Notification is on a rolling basis and decisions are announced within 30 days of receipt of a completed application. Candidates will be offered admission or deferred for further consideration with regular applicants. Although this program does not preclude regular applications to other colleges, participation by a student does imply a commitment to withdraw such applications upon notice of acceptance by Clark.

INTERNATIONAL ADMISSIONS

Foreign students attending secondary schools *within* the United States may use the standard application forms, but it may also be necessary to submit an international application. The Test of English as a Foreign Language (TOEFL) is required of all candidates whose native or official language is not English. TOEFL results for successful applicants are usually in the 550–650 range. For information, write to TOEFL, Box 899, Princeton, NJ 08540. Those attending secondary school in the United States for less than two years need *not* submit results from the Scholastic Aptitude Test (SAT) but these students *must* submit TOEFL scores if their native language is not English. Financial aid for foreign students is limited; the maximum

scholarship for students from abroad is \$5,000 per year based on completion of a financial aid application. Those at secondary schools in the United States under a student visa will need another visa for university study. The *Certificate of Eligibility (I-20)*, necessary to obtain a student visa, will be granted *only* after full admission and receipt of a *Certification of Finances* signed by a bank official.

NOTIFICATION OF ADMISSION AND DEPOSITS

Regular notification of admissions decisions for September freshmen occurs on or about April 1, and Clark subscribes to the Candidates' Reply Date, May 1. For students planning to live on campus, a nonrefundable admission deposit of \$100 *and* a housing deposit of \$100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the \$100 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark.

DEFERRED ADMISSION

Students wishing to postpone enrollment need only submit a request in writing by the assigned reply deadline. Students who undertake academic work in the interim may not automatically defer enrollment, but must reactivate their applications by submitting official transcripts for review.

ADVANCED PLACEMENT/STANDING

Placement in advanced courses is determined by individual performance on departmental examinations, which may be oral or written, or on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. Each score of 4 or 5 on an AP Test, for example, will be credited with a value of two course-units at Clark. Advanced standing may also be earned by transfer; presentation of an official transcript of college-level course work already completed is required. A maximum of one semester's credit (4 units) may be assigned to freshmen enrolling with advanced standing.

TRANSFER CREDIT

Normally, credit is given for academic courses in the liberal arts previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. Credit for courses at nonaccredited institutions is granted on a provisional basis to be evaluated upon successful completion of two semesters of full-time work at Clark. No credit is given for any course completed with a grade lower than C-minus.

Evaluation of credits for college courses completed elsewhere is made on request, at the time of admission or upon receipt of final transcripts, and is used in planning a course program

and in provisional classification as a freshman, sophomore, or junior. A maximum of 50 percent of both the Clark B.A. degree and the departmental major requirements may be accepted in transfer, and normally, a minimum of two academic years at Clark is necessary for completion of degree requirements. Matriculated students should refer to the section on residency requirements.

TRANSFER APPLICANTS

Clark welcomes applications for admission with advanced standing from students attending two- and four-year institutions. The majority of students admitted enter at the junior level, although many transfer to Clark with sophomore and advanced freshman standing.

Of special interest to transfer candidates are the University's B.A./M.A. program options in Comparative Literature, Environmental Affairs, and International Development and Social Change.

The application deadline is May 1 (December 1 for places available at midyear).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work—secondary level and beyond—including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee, such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records.

CAMPUS VISITS AND INTERVIEWS

Prospective students are encouraged to visit the campus and are invited to write or call the Admissions Office (617-793-7431) for details. Interviews, both on and off campus, are available with members of the admissions staff or alumni by appointment in the fall and winter. Interviews are not an admission requirement.

Undergraduate Financial Aid

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance. Special talent in music, art, athletics, and other areas, as well as leadership ability also are considered. However, in no case will an award exceed a student's financial need. Aid is packaged—i.e., a combination of schol-

arships, grants, loans, and part-time employment. The Office of Financial Aid, on behalf of the Committee on Financial Aid, assesses each student's financial circumstances on the basis of the uniform methodology utilized by most institutions and approved by the federal government. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family, and other special circumstances.

The University expects that a student's resources for education will come first from family and his/her own savings and earnings; the University will make every effort to assist the student in obtaining the difference between the total cost and available family resources. No student should fail to apply for admission to Clark University because of the inability of his/her family to pay total educational costs.

INDEPENDENT SOURCES OF ASSISTANCE

All applicants for financial assistance are urged to pursue independent sources of financial assistance. Clark cannot replace outside funds for which a student is eligible but fails to apply. Scholarships are often awarded to graduating seniors by high schools and/or private scholarship agencies in students' local communities. Additional information usually is available in guidance offices.

Residents of Massachusetts are expected to apply for a *State Scholarship*. To apply, students must complete state Financial Aid Forms (FAF), which may be obtained from guidance counselors or financial aid offices. Out-of-state students should investigate the possibility of using state scholarships at Clark.

An important source of federal financial assistance is offered in the form of *Pell Grants*. These grants, which vary in amount up to approximately \$1,800 per year, are available to students who demonstrate financial need according to Federal regulations. All applicants for financial aid are required to apply for a Pell Grant. Students may apply for a Pell Grant by checking the appropriate item on the FAF.

The *Guaranteed Student Loan Program* is designed primarily for middle income families who do not qualify for other types of financial assistance. For those who need additional help, it may be utilized as a resource to supplement scholarship, grant, and loan. Offered chiefly through lending institutions, this program is subsidized by Federal funds. The Federal government will pay the 9 percent simple annual interest while the student is in college. Loans up to \$2,500 per academic year are offered in most states. Additional information and application materials are available at local banks. Information for entering freshmen and upperclassmen may be obtained at the Financial Aid Office.

Veteran's Benefits may be available for service veterans and children of deceased and/or disabled veterans. Eligibility can

be determined by contacting your local Veterans Administration Office.

Social Security Education Benefits may be available for children whose parent(s) are deceased and/or disabled. Additional information is available at your local Social Security Administration Office.

Rehabilitation Assistance may be available for students who qualify for educational benefits. Information concerning rehabilitation services can be obtained at the State Rehabilitation

Clark University Financial Assistance

Clark University makes a commitment to entering students during their freshman year and in each subsequent year at Clark as long as they continue to show financial need. Although any student who enters Clark may apply for assistance as an upperclassman, guarantees are made only to those needy students who received aid their first year and have applied by the application deadlines.

Assistance at Clark is “packaged” in the form of scholarship, loan, grant, and/or employment from the following sources:

Alumni and Friends Scholarships—a portion of the University income is reserved for this purpose and gifts from alumni, parents, and friends provide additional scholarship funds.

Supplemental Educational Opportunity Grants—part of a federal program of assistance to college students demonstrating exceptional financial need. Continued support of this fund is contingent upon annual congressional allocations.

National Direct Student Loans—long-term loans that bear no interest until six months after a student ceases to be at least a half-time student at an institution of higher education. At that time, interest begins to accrue at the annual rate of 5 percent on the unpaid balance. A person borrowing from this fund will repay the amount in equal installments of at least \$30 per month principal over an extended repayment schedule of up to ten years. Continued support is contingent upon annual congressional allocations.

Student Employment—available during the summer and part time during the academic year. The basic source of funds for employment is the Federal College Work-Study Program. Jobs, offered as part of the package of financial assistance, and placements are handled by the Financial Aid Office. In addition, the Job Location and Development Office assists students in finding part-time employment. Although the service operates under the auspices of the Financial Aid Office, it is available to all students regardless of financial need.

ENDOWED SCHOLARSHIPS

Most grants awarded by the University are designated Alumni and Friends Scholarships. Funds for these scholarships are derived from endowed funds. (Because of the various restrictions placed on these funds, it is the policy of the University to select eligible recipients. Students should not apply directly.)

The Reginald Bryant Allen Fund

The Alumni Group Scholarship

The Richard Barnes Memorial Scholarship Fund

The B'nai B'rith Scholarship

The Stella Malkasian Boy Scholarship Fund

The Gertrude and William Brodie Award

The Charles W. and Annie L. Bruninghaus Fund

The Reina and Isidore Chaiklin Scholarship Fund

The Clark University Faculty Women's Club Scholarships

The Gloria Woolson Cockburn Memorial Scholarship Fund

The Celia Daspin Memorial Scholarship Fund

The Depaul-Cunningham Student Loan Fund

The Ruth and Loring Dodd Scholarship Fund

The Theodore T. and Mary E. Ellis Fund

The Albert C. Erickson Scholarship

The Leon E. Felton Memorial Scholarship Fund

The A.D. Ross Fraser Scholarship

The Julian S. Freeman Memorial Scholarship Fund

The Aaron Fuchs Memorial Scholarship Fund

The Lillian and Selig Glick Scholarship Fund

The Paul S. Goldman Memorial Scholarship

The Wallace W. Greenwood Scholarship Fund

The Hall International Fellowship

The Bertram L. and Bessie T. Handleman Fund

The Frank H. Hankins Scholarship

The High School Basketball Tournament Scholarship

The Lennard A. Hill ('57) Memorial Scholarship Fund

The Gertrude and Eva Hillman Scholarship

The Frances Tufts Hoar Fund

The Ruth G. Hodgkins Scholarship Fund

The Drs. Burton P. and Herbert H. Hoffner Endowed Scholarship Fund

The Frederic W. Howe Jr. Scholarship Fund

The Gordon A. Hubley Fund

The M. Hazel Hughes Scholarship

The Jean E. and Theodore H. Hurwitz Scholarship Fund

The George N. Jeppson Scholarship Fund

The Johnson-McLean Scholarship Fund

The Kappa Phi Scholarship Fund

The Ella O. Keene Scholarship Fund

The George F. Kneller Scholarship Fund

The Levi Knowlton Fund

The Dr. Edmund Randolph Laine Scholarship Fund
 The David Ashley Leavitt Memorial Scholarship Fund
 The Joseph Leavitt Scholarship Fund
 The Dwight E. Lee Scholarship Fund
 The Elizabeth T. Little Scholarship Fund for Women
 The Homer Payson Little Scholarship in Geology
 The Livermore and Ambulance Drivers Scholarship
 The Robert H. Loomis Scholarship
 The Chester W. Malmstead Loan Fund
 The Clara A. Mayo Memorial Fund
 The Joshua Morrison Scholarship Fund
 The Nazareth Nanigian and Manasseh Nanigian Memorial
 Scholarship Fund
 The Alice Friend Newton Memorial Scholarship
 The Norton Company Scholarship
 The Gerim M. Panarity Scholarship Fund
 The Abraham Persky Scholarship Fund
 The Joseph Persky Scholarship Fund
 The Gerard Pomerat Scholarship Fund
 The Charles B. Randolph Fund
 The Helen Brewster Randolph Memorial Scholarship
 The Jennie L. Richardson Scholarship
 The William Richardson Scholarship
 The Elliott Stephan Sahagian ('67) Scholarship Fund
 The Sanford Memorial Scholarship
 The Samuel Schanberg Memorial Scholarship Fund
 The Fredric T. Sewall Scholarship Fund
 The Jacob L. Shor Memorial Scholarship Fund
 The Dr. David M. Shor Memorial Scholarship Fund
 The Henry L. Signor Scholarship
 The Abraham Solomon Scholarship Fund
 The Harry D. and Anita Solomon Endowed Scholarship Fund
 The Saul Reuben Stein Scholarship
 The William T. and Barbara H. Stimson Scholarship Fund
 The Russell S. Thompson ('18) Scholarship Fund
 The Michael Thomas Tucker Memorial Scholarship Fund
 The Undergraduate Scholarship Fund
 The Benjamin R. and Grace F. Vandeford Student Aid Fund
 The Henry A. Willis Scholarship
 The Harold C. Wingate Memorial Scholarship Fund
 The George M. and Bee Wolfe Scholarship Fund

APPLICATION PROCEDURES

In addition to filing an application for admission, all freshman candidates applying for financial assistance must submit a completed Financial Aid Form (FAF) to the College Scholarship Service by February 15, and direct that a copy be forwarded to Clark University. The Financial Aid Form may be obtained from the secondary school guidance office. Offers of financial as-

sistance will be made simultaneously with, but independent of, the decision of the Admissions Committee. All recipients are required to verify the information reported on the FAF by filing a copy of their parents' most recent federal income tax return. Early decision candidates should file an Early FAF by November 1. The form may be obtained from the Admissions Office.

Prospective transfer students who are requesting financial assistance should submit the FAF to the College Scholarship Service at the same time application is made for admission. Transfer students must submit a copy of their parents' latest federal income tax return to the Financial Aid Office before an aid decision can be made. Award notification will be made concurrent with acceptance to the University, if possible; FAF processing takes approximately four weeks. Applicants will not be required to post an admission deposit before receiving a financial aid decision.

Upperclassmen must reapply annually for financial assistance by submitting an updated FAF to the College Scholarship Service by March 1. In addition, a copy of the parents' previous year's income tax form (Form 1040) must be filed with the Financial Aid Office by April 15. Assistance is renewed as long as the applicant continues to demonstrate financial need.

Any student interested in financial assistance should request a copy of the Clark University Financial Aid Brochure from the Admissions Office. The brochure contains all pertinent financial aid information including policies and procedures and the rights and responsibilities of aid applicants.

The Graduate School

General Information

Clark University was established in 1887 as the second graduate institution in America. Its faculty and graduates have endowed the University with an impressive record of accomplishments through the years. Under the administration of the Graduate Board, Clark offers programs leading to master's and doctor's degrees to qualified holders of a bachelor's degree or equivalent.

Master of arts degrees are offered in the fields of biology, chemical physics, chemistry, comparative literature, education, English, environmental affairs, geography, government, history, international development, linguistics, mathematics, physics, and psychology. The master of business administration degree is offered by the Graduate School of Management, and the master of health administration is offered by the Graduate School of Management in conjunction with the University of Massachusetts Medical School. In addition, through the College of Professional and Continuing Education (COPACE), Clark offers a master of public administration, a master of science in public health, and a master of arts in liberal arts degree.

Doctor of philosophy degrees are offered in biology, the biomedical sciences (in cooperation with the University of Massachusetts Medical School, the Worcester Foundation for Experimental Biology, and the Worcester Polytechnic Institute), chemistry, chemical physics, economics, geography, history, mathematics, physics, and psychology. A doctor of education degree is offered by the Department of Education. Postdoctoral training is conducted in geography, psychology, and the sciences.

Departments that do not, at present, accept candidates for graduate degrees may offer courses suitable for inclusion in a program of graduate study.

Scholarships, fellowships, and assistantships are listed at the end of this section. Additional information concerning departments and their offerings will be found in the section entitled *Departments and Courses*.

INQUIRIES

Inquiries from foreign students and students in American institutions concerning specific programs of graduate and postdoctoral work should be addressed to the chair of the department concerned or to the relevant dean or director of the program. Please check catalog section, *Departments and Courses*, for names of department chairs and program directors.

ADMISSION TO GRADUATE SCHOOL PROGRAMS

Admission to the Graduate School may be granted *only* by the dean of the Graduate School acting for the Graduate Board on the recommendation of a department or program of the University. An official letter from the graduate dean is the formal notification procedure. Admission to the school does not imply admission to candidacy for a degree.

Application: A prospective applicant from an American institution should communicate with the appropriate department or program head. If encouraged to make an application, the applicant will be provided with an application form, which, accompanied by a \$25 application fee, should be returned to the department or program. In addition, the applicant should arrange the forwarding of an official transcript of all undergraduate and any subsequent academic work and three letters of recommendation from persons who are competent to judge qualifications for graduate study.

Department or program heads may request the submission of additional material, and most require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to take, and to submit the results of, the Graduate Record Examination verbal, quantitative, and advanced tests. Applicants to the Graduate School of Management programs (master of business administration or master of health administration) *are required to take* GMAT rather than GRE examinations.

A foreign student, if encouraged by the department or program head to make formal application, should provide a certified English translation of his or her official record, evidence of English proficiency (TOEFL), at least three letters of recommendation, and a statement concerning the applicant's financial resources or agency support.

Applicants for admission to Graduate School of Management programs must have completed application at least 30 days prior to their desired starting date (Students may choose January, September, or May starting dates.) Applications for admission for all other programs and for financial aid should be completed not later than February 15 if the applicant intends to begin studies the following September. Applications for admission may be submitted, however, throughout the year. Application materials will not be returned to the applicant. Students applying for financial aid are required to fill out a Financial Aid Form before awards are made.

Application for admission as a *special status graduate student* (not in a degree program) should be made through the Registrar's Office.

Admission: Admission to the Graduate School is granted for entry only at a specified time and lapses if the student fails to enter at that time. Admission as a part-time graduate student

may be granted to qualified applicants who cannot devote full time to study, upon recommendation of the department or program head.

If a student, when admitted, is a candidate for a degree elsewhere, he/she must arrange, upon receipt of that degree, to have a supplementary transcript, including a notation of the degree conferred, sent directly to the dean of the Graduate School.

MASTER OF ARTS

Residence: An academic year (eight semester-courses) of study in residence is a minimum requirement for a master's degree. Individual departments or programs may require longer periods of residency. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: Language or other special requirements are included in the department listings in this catalog.

Candidacy: Application for admission to candidacy for a master's degree must be filed with the dean of the Graduate School not later than the first week of the last full semester the student expects to spend in residence as a candidate for a degree. Forms are obtainable at the Registrar's Office.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of the major department or program.

Candidacy for the degree of master of arts is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years on vote of the Graduate Board.

Course and Examination Requirements: Each student must complete at least eight semester-courses in a program approved by the department. One course may be a research course devoted to the preparation of the thesis. Credit for a maximum of two courses at another institution may be approved by the dean of the Graduate School upon recommendation of the department.

Each candidate must pass such written examinations as are required by the major department and a final oral examination by a committee of three or more, one of whom must be a member of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of the department and in a style, length, and format that is appropriate to the problem being researched. The ribbon copy of the thesis, a precis approved by the supervising instructor, and an academic history must be deposited in the Registrar's

Office not later than three weeks before the date of the commencement at which the degree is to be conferred. At least one additional copy of the thesis and the precis must be delivered to the major department, which may require more than one copy. The precis may not exceed 75 words. The title page, precis, and academic history forms are obtainable from the Registrar's Office. The ribbon copy of the thesis must be typed as prescribed in *Directions for Preparation and Presentation of Doctoral Dissertations, Master's Theses, and Research Papers*. These instructions are available at the Registrar's Office.

The thesis is deposited by the Registrar in the University library. The precis is printed in an annual publication, *Dissertations and Theses*.

Diploma Fee: This fee for the master of arts degree is \$25. It covers the cost of the diploma, publication of the precis in *Dissertations and Theses*, and binding of the library copy. It is payable when the thesis is deposited with the Registrar. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Alternative Program: A candidate for the degree of master of arts may be recommended for the degree without a thesis after passing a preliminary doctoral examination.

Nonresident Students: Continuing students who are not in residence at Clark are required to pay a nonresident fee of \$100 per semester.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course, examination, and diploma fee requirements are the same as those listed for the degree of master of arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to: (1) prepare a thesis as required for the M.A. degree; (2) elect two additional subject-matter courses; or (3) elect a research seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of master of arts in education may be found under the Department of Education.

MASTER OF ARTS IN LIBERAL ARTS

For further information, contact the College of Professional and Continuing Education, Clark University.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through the Graduate School of Management. For further information, see listings under the Management section.

MASTER OF HEALTH ADMINISTRATION

This degree is offered through the Graduate School of Management in conjunction with the University of Massachusetts Medical School, Worcester. For further information, see listings under the Management section.

MASTER OF SCIENCE IN PUBLIC HEALTH

For further information, contact the College of Professional and Continuing Education, Clark University.

MASTER OF PUBLIC ADMINISTRATION

For further information, contact the College of Professional and Continuing Education, Clark University.

DOCTOR OF EDUCATION

The program leading to the doctor of education emphasizes human development and learning, as they relate to curriculum, instruction, and evaluation, and the sociology of education. The requirements for this degree closely parallel those for the degree of doctor of philosophy (see below). See catalog section on Department of Education for further information.

DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

The Biomedical Sciences Ph.D. Program began in 1975 with the recognition that certain individuals without a standard academic background, but with previous research experience and an outstanding aptitude for independent research, may benefit from a relatively unstructured program leading to the Ph.D. degree. This is a cooperative program involving Clark University, the University of Massachusetts Medical School, Worcester Foundation for Experimental Biology, and Worcester Polytechnic Institute. It takes advantage of the faculty, facilities, and varied research interests in the biomedically-related sciences in the Worcester area. The primary criteria for admission are research ability and potential, and evaluation of applicants is based largely on evidence of their previously performed research. Award of the Ph.D. requires passing of a preliminary examination and presentation and defense of a research thesis. Competence in the major field in preparation for the preliminary examination can be achieved through independent study, directed study, or formal courses. The Ph.D. degree may be awarded by either Clark University or Worcester Polytechnic Institute, although thesis research may be done at any of the participating institutions under the sponsorship of a faculty member from that institution. Areas for conducting of thesis research reflect the varied research programs of faculty from the participating institutions. These include, but are not limited to: cellular and molecular biology; cell senescence; metabolism, endocrinology, and immunology; pharmacology and experi-

mental pathology; reproductive biology, physiology, neurobiology, and behavioral science; biological engineering, related to nitrogen fixation and development of new symbiotic systems with blue-green algae; bio-mass and bio-energy (silviculture and fermentation technologies).

Admission: The primary criterion used in selection of students for this program is the demonstrated capacity of the applicant to do independent research. In addition to the application form, applicants submit official transcripts of undergraduate and graduate work, Graduate Record Examination (GRE) scores, three letters of reference, and evidence of outstanding research ability (e.g., publications, abstracts, etc.). More complete information may be obtained from the program director.

Applications and all supporting documents should be submitted to the Director, Biomedical Sciences Ph.D. Program, c/o Personnel Office, Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545. Application may be made at any time during the year.

DOCTOR OF PHILOSOPHY

Only well-qualified candidates with proven ability in their special fields of study will be encouraged to proceed to the degree of doctor of philosophy.

Residence: The minimum requirement is one year of full-time study (eight semester-courses beyond the M.A.) or its equivalent in part-time work, in residence.

If the degree of master of arts has been earned at Clark, this requirement is in addition to the residence requirement for that degree.

Foreign Language: Each graduate department sets its own language or related requirements as the student's field of research may demand and must report such requirements in each case to the dean of the Graduate School. If a language is required, either the Educational Testing Service Foreign Language Tests or on-campus tests are employed at the discretion of the department.

Preliminary Examination: Upon completion of preparation in the fields of study, a prospective candidate takes a preliminary examination set by the major department. This examination may be written or oral, or a combination of both. The chair of the department may invite other scholars from within or outside the University to participate in the examination.

Candidacy: An application for admission to candidacy should be filed when the applicant has: (1) completed two full academic years of graduate work or its equivalent in part-time work, including one year at Clark University, (2) completed the departmental requirements in a foreign language, (3) passed a preliminary examination in the chosen field of study,

(4) obtained the written endorsement of the major department. Application forms are obtainable at the Registrar's Office.

Candidacy for the degree of doctor of philosophy is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years by vote of the Graduate Board.

Dissertation: A dissertation, which is expected to make an original contribution to a special field of knowledge, is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is laid before the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 350 words, and a precis, not exceeding 75 words, both approved by the instructor or committees under whom they were written, are also required.

Four weeks before the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, and the ribbon copy of the abstract and of the precis, each in a form prescribed, must be delivered to the Registrar. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis, and academic history forms are obtainable at the Registrar's Office. The ribbon copy of the dissertation must be typed as prescribed in *Directions for Preparation and Presentation of Doctoral Dissertations, Master's Theses, and Research Papers* and *Suggestions for the Preparation of Doctoral Dissertations for Microfilming*. These instructions are available at the Registrar's Office.

The Registrar deposits the dissertation and the abstract in the University library where they remain permanently. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Mich., and is available for duplication by them on request. The abstract is printed in *Dissertation Abstracts*; the precis is printed in an annual publication, *Dissertations and Theses*.

Articles published in refereed journals may be accepted in lieu of a dissertation with the approval of the department and the graduate dean. Requests for approval should include statements that attest to the originality and significance of the study.

Final Examination: The final examination is oral and lasts for at least two hours. Additional written examinations may be given if the major department so directs. The candidate is expected to defend the dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of study. The oral examination is conducted by a committee of at least four members, composed of at least one member of the Graduate Board and such members of the department and nonmembers from within or outside the University as the

chair may appoint. The chair notifies the dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The dean is authorized to invite any person from within or outside the University to be present and to assist in the examination.

Diploma Fee: This fee for the doctor of philosophy degree is \$85. It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses*, publication of the abstract in *Dissertation Abstracts*, and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the Registrar.

Nonresident Students: Continuing students who are not in residence at Clark are required to pay a nonresident fee of \$100 per semester.

POSTDOCTORAL STUDY

Postdoctoral students are classified in three categories: *Honorary Fellows*, visitors for varying lengths of time, always more than a few days, who wish to observe activities of a department, to study, or to carry on research but without formal teaching duties or support by the University; *Research Associates*, who work full time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Trainees*, who enroll in a formally offered postdoctoral training program.

The Honorary Fellows and Research Associates enjoy faculty status, although the extent to which faculty privileges may be granted may be restricted by availability of space and other resources.

FINANCIAL ASSISTANCE

All applicants for admission who request financial assistance are required to file a Student Financial Statement with the College Scholarship Service as part of their application. This form, along with specific instructions, should be requested by contacting the applicant's prospective department or program. Financial aid is not necessarily based on an evaluation of the student's need.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well-qualified students by the University from endowed funds and from other sources. Financial aid to graduate students also is available in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Students

who receive awards must obtain permission from the department before accepting employment.

Application for a scholarship or fellowship to begin in September should be made before February 15 to the chair of the department or director of the program in which the applicant expects to do major work. Late applications, after endorsement by the department, go to the dean of the Graduate School for final approval.

RESEARCH FELLOWSHIPS

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

TEACHING ASSISTANTSHIPS

There are three categories for Teaching Assistantship appointments:

1. *Part-time Lecturer*—a nonprobationary, part-time faculty position that does not lead to consideration for tenure or faculty fringe benefits (TIAA, vacation, etc.). The student is responsible for one or two small classes and should have considerable independence over all aspects of teaching and grading. The student will be under the general supervision and direction of a faculty member.

This category is reserved for the advanced student who has clearly manifested skill in teaching and is qualified and experienced in the subject to be taught. The student should be accorded as many faculty privileges as possible, *e.g.*, attending department meetings and having office space. Stipend for this position is \$3,700–\$4,500 for nine months.

2. *Teaching Apprentice*—students with prior teaching experience, either as an undergraduate or as a graduate assistant. Responsibilities include conducting discussion sections for a course, supervising laboratory sections, running tutorial sessions, grading papers and projects, and discussing these with the undergraduate students.

The student in this category should be under the direction of a professor who would assume responsibility for the student's training as a teacher. Stipend for this category is \$3,700–\$4,300 for nine months.

3. *Teaching Assistant*—students with little or no teaching experience. Responsibilities include tasks that allow assistants to observe experienced teaching assistants or instructors and learn their pedagogical methods. Duties are assigned on a job basis and may include assisting other senior TAs, setting up and tearing down laboratory equipment, and doing a variety of other tasks associated with teaching a course or section.

The assistant may grade examinations only as a part of a general grading team of assistants or under the direct super-

vision of a senior TA or instructor. Stipend for this category is \$3,700–\$4,300 for nine months.

The time commitment for each category is approximately half-time. Tuition will be remitted on all three categories. The number of hours of study an assistant at any level takes in addition to teaching responsibilities should be decided by the department chair with overall supervision from the dean of the Graduate School. The Internal Revenue ruling, which states that payment for teaching is nontaxable provided it is a requirement for an advanced degree, is still in effect, but with some detailed provisions. We have been informed that some cases at other schools have been questioned. If a student chooses to have tax withheld, he/she is usually entitled to a tax refund when filing with the Internal Revenue Service.

Note that the Departments of Biology, Chemistry, Economics, English, Geography, Government, History, Mathematics, Physics, and Psychology require teaching experience for graduate degrees.

ASSISTANTSHIPS

Assistantships are available in several departments. Assistantships involve a variety of services including research with appropriate stipends and usually provide the student with experience which will be useful in later professional work.

GRADUATE FELLOWSHIP AND SCHOLARSHIP FUNDS

Stipends for fellowships and scholarships are provided by:

The Alumni Association Fund, provided by alumni who hold the degree of doctor of philosophy to benefit students studying for that degree.

The George S. Barton Fund, a bequest from the Honorable George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester.

The Elnora W. Curtis Fund, a bequest from Dr. Elnora W. Curtis (A.M. 1908, Ph.D. 1910) for the benefit of graduate students.

The Eliza D. Dodge Fund, to be granted to graduate students of limited means who are engaged in research work.

The Henry Donaldson Jordon Award in History, for high standard of scholastic achievement and qualities of character which will be valuable in the training of teachers.

The Joseph F. Donnelly Memorial Fund, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of doctor of philosophy.

The John White Field Fund, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

The Austin S. Garver Fund, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

Graduate School Scholarship Fund, a bequest from Alexander

H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the Board from 1938 to 1946.

The George Frisbie Hoar Fund, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees.

The Ella O. Keene Scholarship Fund, established by Ella O. Keene (M.A. 1937) for women geography students.

The Myers Fund, a gift of George E. Myers (Ph.D. 1906) to assist graduate students to do research in education and psychology.

The David J. Ott Scholarship, a scholarship designed to support a qualified student towards the Ph.D. degree in economics. The successful candidate is assured support (tuition plus stipend) for three years at Clark.

The Charles H. Thurber Fund, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the Board from 1919 to 1937.

GRADUATE LOANS

Loans, bearing interest at ten percent per year after completion of residency, are available on a limited basis for full-time graduate students upon registration. Applications are available at the Graduate School Office.

LOAN FUNDS

The Mary S. Rogers Scholarship and Loan Fund, established in 1926 for the benefit of students in the Graduate School.

The Mary M. Thurber Fund, established by the late Dr. Charles L. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

The United States Steel Foundation Fund, established primarily for American citizens studying in the areas of psychology, geography, economics, biology, and chemistry.

For loans from these and other sources that may become available, application should be made at the Graduate School Office.

DEPARTMENTAL FUNDS

The Wallace W. Atwood Research Fund. The income from this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geography by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

The Chester Bland Fund. The income from this fund preferably is used to provide aid to a promising student, either in residence or engaged in research elsewhere, under the direction of the Department of History. It also may be used to defray the expense of visiting lecturers or of departmental research.

The Wallace W. Greenwood Fund. The income only is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

The Morton L. "Sonny" Lavine Foundation is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History.

The Libbey Fund, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the department in that field.

The Clara A. Mayo Memorial Fund, established by Joseph A. Weiss in memory of his daughter Clara A. Mayo (Ph.D. 1959). The fund is to be used to provide assistance to women graduate students in the Psychology Department.

GRADUATE ACADEMIC REGULATIONS

GRADING

The grades of A and B (with ~~plus~~ and ~~minus~~) are acceptable for graduate credit; anything lower than a B- is not acceptable. A "P" (pass) signifies that the student has performed at a B- or above level. Incompletes are awarded at the discretion of the instructor.

HOUSING AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. A limited listing of current housing opportunities is posted in several academic buildings, particularly the Dean of Students Office and the International Programs Office. Students are urged to arrive before registration to seek suitable off-campus housing in the immediate area.

Graduate students are invited to take meals in the University dining halls under one of the food plans available. The Snack Bar also is available for single meals.

HEALTH SERVICE

Graduate students who wish to use the on-campus Health Service may do so by paying the health fee at the Bursar's Office. At that time they will be issued a Health Service Identification Card. For a description of the Clark University Health Service, see the listing under Student Services of the Undergraduate College.

HEALTH INSURANCE

Before registering for classes all graduate students are *required* to demonstrate adequate medical insurance coverage. Students

may enroll in the Clark University Student Health Insurance Plan. Applications are available at the Graduate School Office.

Graduate Tuition and Other Charges

Tuition and nonresident fees are due and payable within 30 days of date of issuance of invoice. Accounts 30 days or more past due are assessed interest at the rate of 1 percent per month (annual rate 12 percent). Identification cards are provided each year of residence. A late registration fee of \$25 is charged if registration is not completed by the end of the first week of the semester. Candidates who are not in residence must pay the nonresident fee until the requirements for the degree are fulfilled; nonpayment automatically will terminate candidacy.

SCHEDULE OF TUITION AND OTHER CHARGES

Inquiries concerning tuition and fees for the Master of Business Administration and Master of Health Administration Programs should be made directly to the Graduate School of Management, Clark University.

Inquiries concerning tuition and fees for the master of public administration, master of arts in liberal arts, and master of science in public health should be made to the College of Professional and Continuing Education, Clark University.

Except for students enrolling in the programs noted above, full-time graduate students are charged tuition of \$3,490 per semester. The per-course charge varies according to the department in question and its specific definition of a full program (i.e., in departments that define a full load as four courses per semester, the per-course charge is \$872.50). Students should contact their department chairs to find out which scale applies.

Part-time degree candidates are charged tuition per course according to the scale used by the department in which they are registered.

Special graduate students (nondegree candidates) are charged \$872.50 per course.

Other Fees—payable at registration:

<i>Health Fee (optional)</i>	\$ 90
<i>Health and Accident Insurance (mandatory)</i>	
Single Students	\$135
Married Student and Spouse	\$305
Family Plan	\$388
Student and Child/Children	\$218

Diploma Fee—payable at the time the thesis or dissertation is deposited with the Registrar.**

<i>Master's Degrees</i>	\$25
<i>Doctor of Philosophy Degrees</i>	\$85
<i>Doctor of Education Degrees</i>	\$85

Nonresident Candidate Fees—payable on November 1 and March 1. If the thesis or dissertation is deposited with the Registrar before either date, no fee is charged for the semester. The fees double upon renewal of candidacy.

<i>Master's Candidates</i>	\$100
<i>Doctoral Candidates</i>	\$100

Inquiries concerning tuition and fees for the Master of Business Administration and Master of Health Administration Programs should be made directly to the Graduate School of Management, Clark University.

REFUND

A student who officially withdraws in writing during the first two weeks of any semester is allowed a refund of 60 percent of tuition; during the third week, 40 percent; during the fourth week, 20 percent; after the fourth week, there is no refund. There is no refund on other charges, except board, when a student withdraws from the University.

** Students who do not write a thesis or dissertation, including those receiving the degree through the alternative program, must pay this fee no later than the date on which theses are due in the Registrar's Office.

Departments and Courses

American Studies

PARTICIPATING FACULTY

Ronald P. Formisano, Ph.D., Professor of American History, Program Director

Albert A. Anderson, Ph.D., Associate Professor of Philosophy

James F. Beard Jr., Ph.D., Professor of English

George A. Billias, Ph.D., Professor of History

John Blydenburgh, Ph.D., Professor of Government and International Relations

Martyn J. Bowden, Ph.D., Professor of Geography

Morris H. Cohen, Ph.D., Professor of Government

John J. Conron, Ph.D., Associate Professor of English

James P. Elliott, Ph.D., Associate Professor of English

Bonnie Lee Grad, Ph.D., Assistant Professor of Art History

Anthony W. Hodgkinson, Associate Professor of Screen Studies

Douglas L. Johnson, Ph.D., Associate Professor of Geography

William A. Koelsch, Ph.D., Associate Professor of Geography and History

Sharon Krefetz, Ph.D., Associate Professor of Government and International Relations

Robert J. Ross, Ph.D., Associate Professor of Sociology

AMERICAN STUDIES CONCENTRATION

At present, the American Studies Program at Clark is neither a department nor a major but a *concentration* of seven required courses designed both as an extension of traditional majors and as a coherent undertaking in itself.

Concentration in the American Studies Program offers an interdisciplinary approach to the study of those human values that define American culture and variously manifest themselves in physical, social, and intellectual environments—in events, in institutions, and in the arts (primarily literature, painting, film, and architecture). The concentration has two aims: One is to enable students to analyze closely a variety of 'texts' (a group of people, a house, a poem) and to place these in a cultural 'context,' which brings them into relation with each other. The other is to enable students to arrive at an understanding of American culture as a pattern of values, which permeates American space and changes over time.

Since this course of study is not in itself a discipline but rather a conversation between disciplines, the concentration is based on a conviction that the basis of this conversation is fluency in—or at least acquaintance with—traditional disciplines in the humanities and the social sciences. Students are therefore expected to augment their major discipline with introductory work in two other disciplines. They are further expected to integrate and focus their study of American culture in the program offerings. Finally, they will be encouraged to study, beyond the introductory level, things of interest in the more than 30 courses on American subjects offered at Clark and at affiliated institutions.

Students concentrating in American studies are required to take:

- 1) three core courses: Introduction to History and American Studies; American Culture and Society, 1820–1860; and American Thought and Culture Since 1860.
- 2) four courses in either an American history/literature or an American history/geography sequence. Students interested in the American history/literature sequence would elect two of the following history courses: 200, 201, 202, 206, 208, 209, 219, or 221; and both semesters of English 101. Students interested in the American history/geography sequence may include any two of the history courses listed above and two of the following geography courses: 252, 253, 255, or 272.
- 3) senior level work in courses of an interdisciplinary nature such as the existing cluster courses on landscape, sport, and culture and space that have an American focus, or a senior seminar. Consultation with the program director in senior level course work is strongly recommended.

AMERICAN STUDIES ELECTIVES

More than 30 courses in American subjects are taught at Clark and affiliated institutions. A list of the courses is available in the History and English Departments.

COURSES

INTRODUCTION TO HISTORY AND AMERICAN STUDIES

This course is an introduction to basic problems of interdisciplinary study and historical method as revealed in American issues and writings. The nature of literary, historical, and sociological explanation of individual and group behavior will be examined in the context of the disciplines of history and literature. Autobiography, biography, family history, narrative, fiction, and historiographical writings will be read and discussed. Offered for credit as English 110 and History 110.

Mr. Formisano, Mr. Ford

Offered every year

AMERICAN CULTURE AND SOCIETY, 1820–1860

This course is an interdisciplinary study of the emergence of America as a nation and as a distinctive culture. Attention will be paid to the cultural geography, the arts (primarily literature and painting), and to some significant political and social issues of the period. Some of the germinal works in American studies (Leo Marx's *The Machine in the Garden* and R.W.B. Lewis's *The American Adam*, for example) will be read to provide contexts for the study of representative cultural and

social expressions of the period. The course will include field trips. Offered for credit as History 240 and English 240.

Mr. Conron, Staff

Offered every year

AMERICAN THOUGHT AND CULTURE SINCE 1860

The course examines selected cultural patterns and themes in American thought from the Civil War onward. Readings and discussions draw on multiple disciplinary perspectives. Offered for credit as History 241 and English 241.

Mr. Conron, Staff

Offered every year

Art

See Department of Visual and Performing Arts.

Astronomy

PROGRAM FACULTY

Roy S. Andersen, Ph.D., Professor of Physics, Program Chair

UNDERGRADUATE PROGRAM

One course is available at the introductory level. Advanced topics directly relating to astronomy are listed under Physics. Students interested in advanced work in astronomy should consult with the instructor or the physics undergraduate adviser.

1 EXPLORING THE UNIVERSE

This course is explicitly designed for the non-science major who wishes to learn about the stars. It is also intended to provide for the interests of the student who seeks an acquaintance with the concepts and methods of science but who does not wish to go into the depth of the typical introductory science survey course. Topics considered are interdisciplinary in character since astronomy involves physics, chemistry, biology, and geology. The use of mathematics is minimized; only simple algebra is utilized. Half of the course is devoted to consideration of the planets and the sun. In the other half of the course, the stars, their life cycles, and the galaxies are studied. Theories of the composition and origin of the solar system, of the universe, and of life are explored. The heavens are best understood by having students make direct observations of celestial objects. Emphasis is, therefore, placed on the making, analyzing, and reporting of observations on the moon, sun, planets, meteors, stars, variable stars, nebulae, and galaxies. Students make these observations using telescopes in the University observatory as well as on several night field trips.

Mr. Andersen

Offered every year

Biochemistry

PROGRAM FACULTY

Laurence Berlowitz, Ph.D., Provost and Professor of Biochemistry

John J. Brink, Ph.D., Professor of Biochemistry, Adjunct in Chemistry
Donald J. Nelson, Ph.D., Associate Professor of Chemistry, Adjunct in Biology
George E. Wright, Ph.D., Associate Professor of Chemistry (Affiliate)
Michael Novak, Ph.D., Assistant Professor of Chemistry

PROGRAM

The Biochemistry Program at Clark is designed to serve three types of students with a basic interest in the health related sciences: 1) students wishing to enter the field of biomedical laboratory technology upon completion of their undergraduate degree, 2) students wishing to pursue graduate studies in the biomedical sciences, and 3) students wishing to enter medical school with a strong instrumental and biophysical background. Because of the highly specialized nature of the program, students may only be formally admitted after successful completion of Organic Chemistry (Chem 130 or 132). Admission is contingent upon the approval of the Biochemistry Advisory Committee (composed of all participating faculty members) and the permission of a faculty research adviser.

PROGRAM REQUIREMENTS

The basic requirements for the biochemistry major are: one course in mathematics beyond Math 11, two semesters of Introductory Physics (Physics 11 or 12) plus laboratory and three nonscience courses, of which one must be beyond the introductory level. The program requirements from within the Biology Department's curriculum are: two semesters of Introduction to Biology (Biology 100), one semester of either Genetics (Biology 118) or Microbiology (Biology 109), and one semester of either Cellular Biology (Biology 137) or General Animal Physiology (Biology 240). The requirements from within the Chemistry Department are: two semesters of Introductory Chemistry (Chemistry 100 or 102), two semesters of Organic Chemistry (Chemistry 130 or 132), and one semester of Physical Chemistry I (Chemistry 160). Following is a list of required biochemistry courses:

Bioanalytical Chemistry (Biochemistry 144)

Biophysical Chemistry (Biochemistry 164)

Biochemistry (Biochemistry 270)

Biochemistry Research (Biochemistry 214)

Biochemistry Honors Course (Biochemistry 215)

In addition, students must complete one additional course from the biochemical sciences, such as:

Nutrition (Biology 170)

Protein Chemistry (Biochemistry 272)

Neurochemistry (Biochemistry 273)

Pharmacology (Biochemistry 278)

THE CAPSTONE EXPERIENCE

The culmination of the student's undergraduate biochemistry experience (the capstone experience) is the senior Research Project. The merging of learned theoretical biochemical concepts and acquired practical skills takes place in this exposure to semi-independent biochemical research.

COURSES

144 BIOANALYTICAL CHEMISTRY

Refer to course description under Chemistry 144.

Staff

Offered every other year

164 BIOPHYSICAL CHEMISTRY

This rigorous course in physical chemistry, offered as an alternative to Chemistry 162, emphasizes the physical chemistry of biological systems: enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, and X-ray diffraction. Prerequisite: Chemistry 160. Three lectures and one four-hour laboratory per week. Also listed for credit as Chemistry 164.

Mr. Nelson

Offered every other year

214 SPECIAL PROJECTS

Individual investigations involving laboratory and/or literature research. Offered for variable credit.

Staff

215 HONORS COURSE

The honors course, primarily for majors seeking departmental honors in biochemistry, involves a laboratory research project and participation in departmental seminars. Offered for variable credit.

Staff

239 BIO-ORGANIC CHEMISTRY

This course deals with the chemistry involved in some biologically important reactions, particularly acyl and phosphoryl group transfer reactions, and oxidation-reduction reactions. Information from *in vivo* and *in vitro* studies of biological systems will be coordinated with knowledge developed from model studies with small molecules in an attempt to develop a cohesive picture of the chemical mechanisms of these biological reactions. The type of information that can be obtained from kinetic studies, isotopic substitution, transition state analogs, inhibition studies, model studies, etc. will be discussed. An in-depth discussion of the factors involved in enzymic catalysis is an important part of this course. Other topics, which may be covered if time permits, include the biosynthesis of terpenes and steroids, and the chemistry of various cofactors including flavin, heme, biotin, etc. Prerequisite: Chemistry 130 or 132. Three lectures per week. Also listed for credit as Chemistry 239.

Mr. Novak

Offered every other year

270a and b BIOCHEMISTRY

This is a two-semester course in which the option of taking only the first semester is available to those students not intending to do advanced studies in biochemistry. The course will consider the basic principles and mechanisms of biochemical reactions in metabolic transformations of cell nutrients. The regulation of these processes by enzymes, genes, and hormones will be considered in the light of modern theories of biochemical processes. A laboratory component for the first semester will acquaint students with methods and instrumentation of biochemical research such as radioisotope techniques. The second semester will

cover advanced topics in biochemistry. Prerequisite: Chemistry 130. Three lectures and one lab per week. Also listed for credit as Biology 270a and b and Chemistry 270a and b.

Mr. Brink, Mr. Nelson

Offered every year

271 BIOCHEMISTRY OF NUCLEIC ACIDS

Refer to course description under Biology 271.

Mr. Brink

Not offered on a regular basis

272 PROTEIN CHEMISTRY

This lecture course discusses the structure and function of biologically important macromolecules. Particular emphasis is placed on proteins (enzymes and noncatalytic proteins), protein synthesis from nucleic acids, and the structure and function of biological membranes. Prerequisite: Chemistry 130. Also listed for credit as Chemistry 272. (Formerly Chemistry 270.)

Mr. Brink, Mr. Nelson

Offered every other year

273 NEUROCHEMISTRY

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 270. Also listed for credit as Biology 273.

Mr. Brink

Not offered on a regular basis

277 BIOCHEMISTRY OF DISEASE

This course deals with the biochemical systems that are perturbed in metabolic regulatory processes as, for example, in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components will also be considered. Prerequisite: Chemistry 130 or permission of instructor. Also listed for credit as Biology 277.

Mr. Brink

Offered every other year

278 PRINCIPLES OF PHARMACOLOGY

Refer to course description under Biology 278. Also listed for credit as Chemistry 278.

Mr. Brink, Mr. Wright, Mr. Nelson

Not offered on a regular basis

Biology

DEPARTMENT FACULTY

Vernon Ahmadjian, Ph.D., Professor of Botany, Department Chair

Laurence Berlowitz, Ph.D., Provost and Professor of Biochemistry

John J. Brink, Ph.D., Professor of Biochemistry

Joseph C. Curtis, Ph.D., Professor of Zoology

Rudolph F. Nunnemacher, Ph.D., Professor of Zoology

John T. Reynolds, Ph.D., M.P.H., Professor of Microbiology

H. William Johansen, Ph.D., Associate Professor of Botany

Timothy A. Lyerla, Ph.D., Associate Professor of Developmental Genetics

Nicholas S. Thompson, Ph.D., Associate Professor of Psychology and Ethology

M. Margaret Comer, Ph.D., Assistant Professor of Molecular Biology
 Todd P. Livdahl, Ph.D., Assistant Professor of Ecology
 Dennis Meiss, Ph.D., Assistant Professor of Physiology
 Donald J. Nelson, Ph.D., Associate Professor of Chemistry, Adjunct
 Associate Professor of Biology
Affiliated Staff
 Charles S. Blinderman, Ph.D., Professor of English and Biology
 Warren Litsky, Ph.D., Professor of Microbiology
 Leonard J. Morse, M.D., Professor of Microbiology
 Harris Rosenkrantz, Ph.D., Professor of Biochemistry
 Douglas R. Waud, M.D., D. Phil., Professor of Pharmacology
 Paul A. Erickson, M.A., Assistant Professor of Environmental Science

UNDERGRADUATE PROGRAM

The Biology Department views as its primary roles for undergraduate education within the University: training biologists in a preprofessional sense, especially those individuals entering careers that use the biological sciences as their bases; providing support for other programs in the University that require some exposure to biology; and integrating the paradigm of the biological sciences into a liberal arts curriculum. The goals for its majors relate directly to the development of an independent or autonomous learner, particularly since this development is required for anyone who is to remain current with the ever-increasing body of knowledge in this field. With respect to its undergraduate majors then, the department attempts:

1. to provide an updated, coherent statement of the field—a curriculum organized to reflect the inherent organization of the discipline.
2. to familiarize the student with the process by which biological information is acquired by exposing particularly the interrelationships between experiment and theory.
3. to develop a critical facility in its students, an ability to judge quality work within this field.

The major in biology is suitable for those intending to apply for graduate studies in biology, medicine, dentistry, etc. Courses in the major must be taken for the letter grades, unless otherwise specified.

A departmental major must take eight courses in biology of which six must be courses more advanced than the introductory course. However, only two of the six courses may be in directed research, directed readings, or an internship. The "Introductory Biology Year-course" will be prerequisite for all other courses in biology, but students must fulfill prescribed prerequisites for specific courses.

A biology major must take, in related fields, a year of General Chemistry, a year of Introductory Physics, and at least one additional year course in chemistry, physics, or geology, including in each case the laboratory for a total of six semester or three year courses. Additionally, the major in biology must take a full year of calculus. None of the aforementioned courses may be taken on a "pass/no-record" option.

At least nine courses of a major's program must be taken from courses outside the fields of biology, chemistry, geology, mathematics, physics and must not include any of the courses specified in the preceding paragraphs.

Effective for biology majors entering Clark University in September 1979, or later, each student will be required to take at least one course from each of the following four groups: (1) Invertebrate Zoology, Comparative Anatomy, Embryology; (2) Introductory Botany, Microbiology;

(3) Cellular Biology, Animal Physiology, Biochemistry; (4) Genetics, Ecology, Animal Behavior. Since Animal Physiology and Biochemistry have prerequisites of Introductory Chemistry and Organic Chemistry, respectively, these courses most likely would be taken during the junior and senior years.

The department urges all potential majors to select and to consult with an adviser to obtain the maximum benefits the department has to offer.

HONORS PROGRAM

An honors program is available to especially well-qualified majors and requires the student to engage in an independent research project during the senior year together with meeting other departmental requirements, i.e., a broad distribution of courses, quality grades, and an honors thesis and examination.

Specific criteria for admission to the honors program are available in the departmental office.

GRADUATE PROGRAM

The department offers courses leading to master of arts and doctor of philosophy degrees in specialized phases of bacteriology, biochemistry, botany, cytology, embryology, genetics, marine biology, physiology, and zoology. Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory standing in the Graduate Record Examination. Tuition scholarships and teaching assistantships are available. Detailed information can be obtained from the department chair.

PUBLIC HEALTH PROGRAM

The department offers a program of study leading to the master of science in public health degree. For particulars of the program, interested persons are referred to the COPACE graduate catalog. This program is currently being expanded into a five-year program leading to both baccalaureate and M.S. degrees.

MASTER OF ARTS

The program usually requires three or four semesters of academic work and includes teaching experience and research culminating in an acceptable thesis.

DOCTOR OF PHILOSOPHY

The requirements, identical with those of the University, can be found in the catalog section on the Graduate School and includes teaching experience. The student's program is planned according to his/her needs with his/her program director.

COURSES

100 INTRODUCTION TO BIOLOGY

The introductory course in biology is designed with three goals in mind: (1) to provide students with an understanding of the unifying principles in biology; (2) to introduce students to the diversity of plant and animal life, both at the cellular and organismic level, showing how this diversity is expressed through adaptations in form and function; and (3) to expose the student to methods and modes of scientific inquiry in the

biological sciences. Introduction to Biology serves as a prerequisite for all other courses in biology. Three lectures and one laboratory per week. Mr. Nunnemacher, Mr. Reynolds Offered every year

101 PALEO-ZOOLOGY

Mr. Nunnemacher

102 NATURAL HISTORY OF NORTH AMERICA

Mr. Johansen

104 PLANTS AND MAN

Mr. Johansen

105 BIOLOGY AND MAN

Mr. Nunnemacher

107 MARINE ECOLOGY OF BERMUDA

Mr. Nunnemacher

109 MICROBIOLOGY

Mr. Reynolds

110 INTRODUCTION TO BOTANY

ious ecosystems, as well as their positive and negative relationships to people, also are treated. Three lectures and one laboratory per week.
Mr. Ahmadjian, Mr. Johansen Offered every year

Offered every year

111 BIOLOGY OF PESTS AND ENDANGERED SPECIES

III. BIOLOGY OF PESTS AND ENDANGERED SPECIES
This course considers factors that influence the relationship between humans and other species, and possible strategies for controlling or preserving natural populations.

Mr. Livdahl

Offered every other year

112 COMPARATIVE ANATOMY

112 COMPARATIVE ANATOMY
This is a comparative study of the morphology of the vertebrates with emphasis on the evolution of animals from fish to man. Two lectures and two laboratory periods per week.

Mr. Nunnemacher

Offered every year

115 FLOWERING PLANTS

This course is an introduction to the systematics, evolution, ecology, and economic importance of flowering plants, with emphasis on the New England flora. Ferns, fern-allies, and gymnosperms will also be included. Short field trips will be made to nearby areas for examination of the spring flora. Two two-hour lecture laboratory periods per week.

Mr. Ahmadjian

Offered every other year

117 PRINCIPLES OF ECOLOGY

This course provides an overview of ecology as a scientific discipline. The primary emphasis will be placed on efforts to explain and predict the distribution and abundance of organisms, how ecological communities are composed, and why they vary in time and space.

Mr. Livdahl

Offered every year

118 GENETICS

This is a course in the principles and problems of genetics. Topics covered include Mendelian genetics; the molecular nature and function of the gene; gene and chromosome mutation; genetic mapping in bacteriophages, bacteria, fungi, and higher organisms; and population genetics. Prior exposure to freshman chemistry is recommended.

Ms. Comer, Mr. Lysterla

Offered every semester

120 HISTOLOGY

The microscopic anatomy of tissues and organs of mammals will be studied. Prerequisite: 112. Two lectures and two laboratory periods per week.

Mr. Nunnemacher

Offered every year

124 ENDOCRINOLOGY

The chemistry and biological actions of hormones are discussed with emphasis on the mammalian endocrine system. Integration of studies of the ultrastructure and biochemistry of endocrine glands and their target tissues are a major focus of this course. Three lectures per week.

Mr. Curtis

Offered every year

126 GENETICS AND SOCIETY

A basic course in genetics for the non-science major emphasizing methods of genetic analysis in humans and the role of genetics in modern

society. Topics to be covered include: genetic diseases, chromosomal abnormalities, genetic screening, statistical analyses for polygenic traits, and population genetics.

Mr. Lyerla

Offered every year

137 CELLULAR BIOLOGY

The cell as a structural and functional unit will be studied. Introduction to the physicochemical properties and metabolic roles of molecules and macromolecules of cellular origin. Discussion of the roles of the nucleus and cytoplasm in the regulation of cellular processes. Three lectures and one laboratory per week. Prerequisite: 100 or permission of instructor.

Mr. Curtis

Offered every year

170 PRINCIPLES OF NUTRITION

The perspective of human health will be studied from the point of view of biological regulatory processes. The basic components of food will be presented, and their biological function of maintaining human growth and vitality will be studied. The role of food additives and cultural variations in diet in regard to pathology will be discussed. Prerequisite: permission of instructor.

Mr. Brink

Offered every year

181 BIOLOGICAL DETERMINISM AND BEHAVIOR

Refer to course description under Psychology 195.

Mr. Thompson

182 PRINCIPLES OF BEHAVIORAL EVOLUTION I: FUNDAMENTALS

Refer to course description under Psychology 135.

Mr. Thompson

183 LANGUAGE OF BIOLOGY

The course is concerned with the study of Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and anatomy. In addition, the course surveys the history of biology through its language: when certain concrete and abstract terms entered the language, who invented them, how their meaning may have changed, and possible alternate contemporary definitions.

Mr. Blinderman

Not offered on a regular basis

211 SEMINAR IN SYMBIOSIS

The many different aspects of plant and animal symbiotic associations will be studied using original research articles. Along with the descriptive and functional aspects of each type of association, the experimental techniques used to study the relationships between the symbionts will be examined.

Mr. Ahmadjian

Offered every other year

213 SEMINAR IN BOTANY

Selected topics in plant biology. Students will prepare papers and present seminars.

Mr. Ahmadjian, Mr. Johansen

Offered every other year

214 SEMINAR IN PHYCOLOGY

Selected topics dealing with algae from the structural, physiological, or ecological points of view will be discussed. Prerequisite: 110 or permission of instructor.

Mr. Johansen

Offered every other year

215 INVERTEBRATE ZOOLOGY

A survey of 96 percent of all animal species, this course examines the major invertebrate groups from morphological, ecological, and evolutionary perspectives. Two lectures and one laboratory session per week.

Mr. Livdahl

Offered every other year

217 MARINE BIOLOGY

This course is an introduction to plant and animal life in the oceans from the point of view of diversity, ecology, and evolution. Also included will be the relationships of marine biology to the welfare of mankind.

Mr. Johansen

Offered every year

219 LABORATORY IN ETHOLOGY

Refer to course description under Psychology 200.

Mr. Thompson

220 POPULATION BIOLOGY

This course examines the properties that exist only at the population level, including schedules for birth and death, population growth patterns, spatial variation in abundance, genetic variation, and the factors that modify these features through time. Prerequisite: Genetics, Principles of Ecology, or permission of instructor.

Mr. Livdahl

Offered every other year

221 ANIMAL DEVELOPMENT

This is a consideration of the fundamentals of animal development with primary emphasis on the vertebrate embryo. Three lectures and one laboratory period per week. Prerequisite: 112 or permission of instructor.

Mr. Lyerla

Offered every year

222 SEMINAR IN COMMUNITY ECOLOGY

Factors affecting the biological structure of natural communities will be examined, with close attention to field experiments on competition and predation. Prerequisite: permission of instructor.

Mr. Livdahl

Offered every other year

224 NEUROANATOMY

The structural and functional organization of the central nervous system of man will be studied. Prerequisite: 112 or permission of instructor. Three lectures per week.

Mr. Nunnemacher

Not offered on a regular basis

225 ELECTRON MICROSCOPY

This is an introduction to the principles of electron optics, use of the electron microscope, preparation of specimens, and the techniques of electron microscopy applicable to biological investigations. Two lectures

and two laboratory periods per week. Prerequisite: permission of instructor.

Mr. Curtis

Offered every year

228 MOLECULAR GENETICS

This course is designed to acquaint the student with recent discoveries in the field. It will include lectures on key techniques such as recombinant DNA methodology and DNA sequencing, plus seminars and/or informal discussion on specific topics. The latter will include such things as DNA replication and recombination mechanisms, transcriptional regulation, overlapping genes, and split genes (intervening sequences). Emphasis is placed on the reading of original journal papers. Intended primarily for seniors and graduate students. Prerequisites: 118 or 270.

Ms. Comer

Not offered on a regular basis

229 ADVANCED TOPICS IN GENETICS

This course is a lecture-seminar format designed to review specialized topics in genetics. Prerequisite: 118; permission of instructor.

Mr. Lyerla

Offered every year

230 VIROLOGY

This is a course in the molecular biology of viruses, including up-to-date coverage of virus structure and molecular mechanisms of reproduction. Animal, plant, and bacterial viruses are considered. Intended for advanced undergraduates and graduate students. Prerequisite: 109 or 118 or 270.

Ms. Comer

Offered every other year

232 SELECTED TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH

A seminar for advanced undergraduates and beginning graduate students. Prerequisite: permission of instructor. Two 75-minute meetings per week. Also listed for credit as Environmental Affairs 232.

Mr. Reynolds

Offered every other year

238 ISSUES IN PUBLIC HEALTH

An introduction to the principles and methodology of epidemiology accompanied by selected case studies illustrating approaches and problems associated with the resolution of health policy questions. Prerequisite: permission of instructor. Also listed for credit as Environmental Affairs 238.

Mr. Reynolds

Offered every year

239 BIOLOGICAL AND HEALTH ASPECTS OF WATER POLLUTION CONTROL

A review of the approaches, principles, and criteria used in the development of water quality standards. The participants do not have to be biology majors but will be expected to be literate in one or more of the scientific disciplines. Prerequisite: permission of instructor. Two seventy-five minute meetings per week. Also listed for credit as Environmental Affairs 239.

Mr. Reynolds

Offered every other year

240 ANIMAL PHYSIOLOGY

This is an introduction to the principles underlying physiological functions common to all living animals. The course covers the subcellular,

cellular, and organ levels of organization and places a primary emphasis on the integrative processes whereby all of the diverse organs and systems are oriented to the performance of the complete organism. Prerequisite: Introductory Chemistry. Three lectures and one lab per week.

Mr. Meiss

Offered every year

242 TOPICS IN ENVIRONMENTAL PHYSIOLOGY

A consideration of the life and habits of animals and their peculiar solutions to physiological problems encountered in different and often harsh environments. Topics covered will include the biological adaptations to desert, arctic, and aquatic environments. Prerequisite: 240 or permission of instructor.

Mr. Meiss

Not offered on a regular basis

247 SEMINAR IN NEUROPHYSIOLOGY

This is a seminar on the principles of transmission, integration, and storage information in neuronal pathways and other considerations of the nervous system and muscles. Prerequisite: 249 or permission of instructor.

Mr. Meiss

Offered every year

249 PRINCIPLES OF NEUROPHYSIOLOGY

This is a comparative approach to the physiology of nervous systems and muscle. The emphasis is on cellular neurobiology including resting and action potentials, synaptic transmission, sensory physiology, and integrative mechanisms. Three lectures and one lab per week. Prerequisite: 240, Introductory Physics, or permission of instructor.

Mr. Meiss

Offered every year

260 DIRECTED RESEARCH

This is an advanced semi-independent study of an approved topic under the direction of a departmental member. Prerequisite: permission of instructor.

Staff

261 DIRECTED READINGS

Advanced readings on an approved topic will be under the direction of a departmental member. Prerequisite: permission of instructor.

Staff

262 HONORS IN BIOLOGY

Readings and research for students in the honors program. Credit/no record only.

Staff

270a and b BIOCHEMISTRY

This a two-semester course in which the option of taking only the first semester is available to those students not intending to do advanced studies in biochemistry. The course will consider the basic principles and mechanisms of biochemical reactions in metabolic transformations of cell nutrients. The regulation of these processes by enzymes, genes, and hormones will be considered in the light of modern theories of biochemical processes. A laboratory component for the first semester will acquaint students with methods and instrumentation of biochem-

ical research, such as radioisotope techniques. The second semester will cover advanced topics in biochemistry. Prerequisite: Chemistry 130. Three lectures and one laboratory per week. Also listed for credit as Biochemistry 270a and b and Chemistry 270a and b.

Mr. Brink, Mr. Nelson

Offered every year

271 BIOCHEMISTRY OF NUCLEIC ACIDS

The chemical and physical properties of RNA and DNA derived from various sources will be considered with respect to their isolation, separation, and characteristics. The functional role and biological significance of the nucleic acids in subcellular organelles will be examined. Prerequisite: Biology 270 or permission of instructor. Also listed for credit as Biochemistry 271.

Mr. Brink

Not offered on a regular basis

273 NEUROCHEMISTRY

The metabolic aspects of brain amines and biopolymers will be considered in relation to neural function. Effects of drugs on memory processes will be discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry or permission of instructor.

Mr. Brink

Not offered on a regular basis

277 BIOCHEMISTRY OF DISEASE

This course deals with the biochemical systems that are perturbed in metabolic regulatory processes as for example, in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components will also be considered. Prerequisite: Chemistry 130 or permission of instructor. Also listed for credit as Biochemistry 277.

Mr. Brink

Offered every year

278 PRINCIPLES OF PHARMACOLOGY

This course is intended to acquaint the student or research worker with established principles and the more important phenomena involved in the study of pharmacology. Particular emphasis is placed on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated. Also listed for credit as Biochemistry 278 and Chemistry 278. (Formerly Biology 268 and Chemistry 268.)

Mr. Brink, Mr. Nelson

Not offered on a regular basis

280 BIOMETRY AND EXPERIMENTAL DESIGN

This course provides a background in the basic methods of data analysis for biologists, applications of mathematics to the description of biological phenomena, and the generation of testable hypotheses from models of biological processes. Prerequisite: at least one biology course beyond the introductory course.

Mr. Livdahl

Offered every other year

300 READINGS AND RESEARCH IN BIOLOGY

Offered for variable credit.

Staff

310 SCIENTIFIC WRITING FOR GRADUATE STUDENTS

This is an introduction to the techniques of writing scientific papers. The principal assignment will be the writing of a journal article and a

detailed analysis of the steps involved. Related areas which will be covered include searching the scientific literature, handling of quantitative data relevant to biological systems, and oral presentation of a scientific paper. Prerequisite: permission of instructor.

Mr. Ahmadjian

Offered every other year

315 SEMINAR IN LICHENOLOGY

This is a detailed, yet broad, treatment of lichens with discussion of recent theories concerning their evolution and development. Symbiotic interactions, ecology, growth, nutrition and metabolism, water relations, chemistry, and genetics will be considered. Several local field trips and laboratory sessions will be held to deal with aspects of taxonomy and morphology.

Mr. Ahmadjian

Not offered on a regular basis

325 SEMINAR IN CELL BIOLOGY

The fine structure of subcellular organelles and macromolecules in relation to their biological functions will be discussed. Evidence obtained by a variety of physical and chemical methods will be considered, particular emphasis being placed on electron microscopic studies. Prerequisite: permission of instructor.

Mr. Curtis

Offered every other year

330 SEMINAR IN BIOCHEMICAL GENETICS

This course is intended for graduate students interested in molecular biology, biochemistry, or genetics. Students and faculty participants in turn present informal seminars on recent journal articles or on their own research. To be offered for one-half credit in both the first and second semesters; may be repeated for credit. Prerequisite: permission of instructor.

Ms. Comer

Not offered on a regular basis

332 SEMINAR IN BACTERIOLOGY

Selected topics in bacterial ecology and applied bacteriology will be discussed. Prerequisite: permission of instructor.

Mr. Reynolds

Not offered on a regular basis

334 SEMINAR IN BEHAVIOR AND EVOLUTION

This is a consideration of contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular. Also listed for credit as Psychology 267.

Mr. Thompson

Offered every year

341 SEMINAR IN ENDOCRINOLOGY

Discussions in this course focus upon current literature on the chemistry and biological actions of hormones. Integration of studies of the fine structure and biochemistry of endocrine glands and their target tissues is emphasized.

Mr. Curtis

Offered every other year

350 GRADUATE SEMINAR

Staff

360 MASTER'S THESIS

Offered for variable credit.

Staff

Business/Management

See Department of Management.

Chemistry

DEPARTMENT FACULTY

Alan A. Jones, Ph.D., Associate Professor of Chemistry, Chair
Daeg S. Brenner, Ph.D., Professor of Chemistry
Harry C. Allen Jr., Ph.D., Professor of Chemistry, Associate Provost,
Dean of Research
Karen L. Erickson, Ph.D., Professor of Chemistry
Edward N. Trachtenberg, Ph.D., Professor of Chemistry
Wen-Yang Wen, Ph.D., Professor of Chemistry
Donald J. Nelson, Ph.D., Associate Professor of Chemistry
Frederick T. Greenaway, Ph.D., Assistant Professor of Chemistry
Michael Novak, Ph.D., Assistant Professor of Chemistry
John J. Brink, Ph.D., Professor of Biochemistry, Adjunct Professor of
Chemistry
Marcel Gut, Ph.D., Professor of Chemistry (Affiliate)
David Kupfer, Ph.D., Professor of Chemistry (Affiliate)
George E. Wright, Ph.D., Associate Professor of Chemistry (Affiliate)

UNDERGRADUATE PROGRAM

The Chemistry Department offers an undergraduate program with the following goals in mind:

- 1) to provide a variety of course offerings that are consistent with the accreditation requirements of the American Chemical Society;
- 2) to offer a program that will prepare students for graduate work in chemistry and related fields;
- 3) to provide a strong scientific background for students planning careers in health-related professions;
- 4) to encourage students not majoring in science to obtain an overview of the impact of science on society.

The requirements for the chemistry major are two courses in calculus (Mathematics 120 and 121), two courses in physics (Physics 110 and 111 or preferably 112) and eight courses in chemistry and related fields beyond Chemistry 100. These courses must include:

<i>Course</i>	<i>Number</i>	<i>Course Credit</i>
Organic Chemistry	130	2
Inorganic Chemistry	150	1
Physical Chemistry I	160	1
Physical Chemistry II or Biophysical Chemistry	162 164	1
Analytical Chemistry or Environmental Chemistry or Bioanalytical Chemistry	140 142 144	1

The remaining two-course requirement is normally satisfied by advanced chemistry courses, one of which may be Chemistry 214, Special Projects; or Chemistry 215, Honors. On occasion, with permission from the department, the student may substitute an advanced level course in biochemistry, computer science, mathematics, physics, or biology. In addition, at least six courses in a major's program must be taken from courses outside the fields of biology; biochemistry; computer science; chemistry; geology; mathematics; physics; science, technology and society; and environmental affairs.

Students planning graduate study in chemistry are strongly urged to take Physics 112 rather than Physics 111. In addition to the stated requirements, it is recommended that students take Chemistry 200, 231, 290 and/or advanced mathematics, physics and biochemistry courses, depending on the area of interest. Computer courses are also recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 215) or in a special projects course (Chemistry 214) and may do so after completing Chemistry 130.

A student may elect as his/her first course in chemistry—Chemistry 10, 100, or 130. The decision to start with Chemistry 130 (an accelerating option) must be made in consultation with the department chair and may require taking a placement examination offered at the beginning of the academic year.

Students wishing to be accredited by the American Chemical Society should consult the department chair with regard to specific course requirements.

The department publishes an undergraduate handbook, *Chemistry at Clark*, which provides additional information. Copies are available at the departmental office.

HONORS PROGRAM

An honors degree program is offered for highly qualified majors. Students wishing to enter this program must apply to the department for permission prior to the beginning of senior year. Participants are required to engage in an independent research project, participate in the departmental seminar program, and pass a set of comprehensive examinations. Further information about the program can be obtained from the department chair.

GRADUATE PROGRAM

The department offers programs leading to the degrees of master of arts and doctor of philosophy with specialization in various fields of chemistry. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his/her progress in research work and, together with the student, defines the formal course work requirements. In the case of master's degree candidates, the requirements are essentially those of the University as stated elsewhere in the catalog. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal course work, the student must pass qualifying and preliminary examinations, and the department language requirement must be met. For further details, students should consult the appropriate departmental publications.

Graduate scholarships, teaching assistantships, and research fellowships are available. Further information on these awards may be obtained from the department chair.

COURSES

10 TOPICS IN CONTEMPORARY CHEMISTRY

This one-semester, relatively nonmathematical course is designed for students majoring in social science or the humanities and is intended to develop a qualitative feeling about chemistry as it relates to the modern world. Approximately half of the course is concerned with the development of modern chemical thought, while the remainder deals with current societal problems such as nuclear weapons and reactors, air and water quality, drugs, food additives, polymers, poisons, and others. Three lectures per week.

Staff Offered every year

100 INTRODUCTORY CHEMISTRY

This systematic study of the elements and their principal compounds and of the fundamental laws and theories of chemistry is designed as an introduction to the field of chemistry. A knowledge of high school algebra is necessary; high school chemistry and physics, though helpful, are not required. This course is designed to meet the needs of chemistry majors, students interested in biology, physics, medicine, and dentistry as well as those seeking a knowledge of chemistry as part of their liberal arts education. Three lectures and one four-hour laboratory per week. Two lecture sections with enrollment in each limited to 75.

Staff Offered every year

130 ORGANIC CHEMISTRY

The lectures emphasize the synthesis and reactions of organic compounds, structure determination, and reaction mechanisms. The laboratory concentrates on the preparation and physical, spectral, and chemical properties of important classes of organic compounds. Prerequisite: Chemistry 100 or advanced placement. Three lectures and one four-hour laboratory per week.

Staff Offered every year

140 ANALYTICAL CHEMISTRY

This course covers the theoretical principles and technical methods employed in the qualitative and quantitative analysis of matter. The course emphasizes the application of theoretical ideas to the analysis of actual samples in the laboratory. Topics include equilibrium theory and potentiometric titrations, volumetric and gravimetric analysis, various types of spectroscopic analysis, chromatography, and electrochemistry. Prerequisite: Chemistry 100. Two lectures and one four-hour laboratory per week.

Mr. Greenaway Offered every year

142 ENVIRONMENTAL CHEMISTRY

This course focuses on the chemistry related to environmental problems, particularly aquatic chemistry and aquatic pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are conducted in the laboratory according to Environmental Protection Agency procedures. Prerequisite: Chemistry 100. Two lectures and one four-hour laboratory per week.

Staff Offered every other year

144 BIOANALYTICAL CHEMISTRY

This laboratory-oriented course presents both theoretical and practical aspects of quantitative analysis in biological systems. Topics discussed include chromatography, electrophoresis, immunochemistry, ultracentrifugation,

absorption and fluorescence, enzyme analyses, and radioactivity counting procedures. Prerequisite: Chemistry 162. Two lectures and one four-hour laboratory per week.

Staff

Offered every other year

150 INORGANIC CHEMISTRY

This course deals with theories of structure and bonding and their utility in explaining the chemistry of inorganic substances. Topics include molecular orbital, valence bond, and crystal field theories of bonding and examples of the use of these theories in explaining the structures and reactivities of inorganic molecules; acid-base theory, spectroscopic methods, and kinetics. Emphasis is placed on the interpretation of structure and reactivity in terms of basic molecular and atomic parameters. Prerequisite: Chemistry 100. Two lectures and one four-hour laboratory per week.

Mr. Greenaway

Offered every year

160 PHYSICAL CHEMISTRY I

This course covers the principles of physical chemistry as applied to gases, liquids, solids, and solutions. Much of the course is an introduction to the topic of chemical thermodynamics. The laboratory includes experiments in physical chemistry, the development of techniques of measurement and technical report writing. Prerequisites: Mathematics 120 and Chemistry 100. Prerequisite or corequisite: Chemistry 130 and either Physics 112 or a strong high school background in physics. Three lectures and one four-hour laboratory per week.

Mr. Wen

Offered every year

162 PHYSICAL CHEMISTRY II

The topics covered in this continued discussion of physical chemistry are solutions of the Schrodinger equation for simple systems, atomic and molecular spectroscopy, magnetic resonance, solid state and X-ray diffraction, statistical thermodynamics, and chemical kinetics. Three lectures and one four-hour laboratory per week. Prerequisite: Chemistry 160.

Mr. Wen

Offered every year

164 BIOPHYSICAL CHEMISTRY

Refer to course description under Biochemistry 164.

Mr. Nelson

Offered every other year

200 PHYSICAL CHEMISTRY III

This is essentially an introduction to quantum mechanics and covers elementary quantum-mechanical treatment of the structure of atoms and molecules. Three lectures and one discussion per week. Prerequisites: Chemistry 160 and 162 or 164.

Staff

Offered every other year

210 PHYSICAL CHEMISTRY IV

The course deals with the application of group theory to problems of chemical interest such as molecular vibrations, hybrid orbitals, and molecular orbital theory. Three lectures and one discussion per week. Prerequisite: Chemistry 200 or permission of instructor.

Staff

Offered every other year

214 SPECIAL PROJECTS

Individual investigations involve laboratory and/or literature research. Offered for variable credit.

Staff

Offered every semester

215 HONORS COURSE

The honors course, primarily for majors seeking departmental honors in chemistry, involves a laboratory research project and participation in departmental seminars. Offered for variable credit.

Staff

Offered every semester

220 POLYMER SCIENCE

The physical chemistry of synthetic polymers will be presented including discussion of kinetic mechanisms of polymerization, molecular weight distributions, unperturbed dimensions, structure and conformation, viscosity, and dynamic properties. Specific experimental methods useful in polymer chemistry such as osmotic pressure, light scattering, gel permeation chromatography, viscoelastic response, nuclear magnetic resonance, and dielectric response also will be reviewed. Prerequisite: Chemistry 162 or 164.

Mr. Jones

Offered every other year

224 ENERGY AND COAL

This course will include the following topics: the general character of coals and their structures, coal chemistry, gasification principles, thermochemistry and thermodynamics, energy efficiency and utilization, reaction kinetics and catalysis, various gasifiers, liquefaction principles, solvent refined coals, advanced analytical techniques, and environmental considerations. In this course, energy considerations in relation to coal conversions will be emphasized. Prerequisite: Chemistry 130. Three lectures per week.

Mr. Wen

Offered every other year

230 PHYSICAL ORGANIC CHEMISTRY

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics, and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisites: Chemistry 130, 160, or permission of the instructor.

Mr. Novak, Mr. Trachtenberg

Offered every other year

231 ADVANCED ORGANIC CHEMISTRY

This course provides a framework for students who wish to pursue an interest in organic chemistry beyond the normal two semester sequence. Many important topics in modern organic chemistry which cannot be covered in depth in the first two semesters are studied. These topics include rearrangements and neighboring group effects, nonclassical ions, concerted reaction mechanisms, chemistry of important biological molecules including steroids, terpenes, and various cofactors. Important spectroscopic methods also will be discussed. These include advanced topics in proton magnetic resonance, carbon-13 magnetic resonance, and mass spectroscopy. Prerequisite: Chemistry 130. Three lectures per week.

Ms. Erickson and Mr. Novak

Offered every other year

232 ADVANCED ORGANIC CHEMISTRY

This course is the same as Chemistry 231 except that there is an additional four-hour lab each week where experiments related to the lecture material are performed. This is offered for 1½ credits.

Ms. Erickson, Mr. Novak

Offered every other year

233 ORGANIC CHEMISTRY OF BIOMOLECULES

This lecture emphasizes the synthesis, proof of structures, reactions, and reaction mechanisms of important classes of molecules playing significant

biological roles. Topics discussed will be the carbohydrates, fats, proteins, and cyclic ureides, including the pyrimidines and purines of importance in drugs and on nucleic acids. A selection of other molecules from the steroids, alkaloids, and terpenoids also will be discussed briefly. Prerequisite: Chemistry 130.

Mr. Trachtenberg

Offered every other year

235 NATURAL PRODUCTS

The structure, synthesis, and chemistry of selected secondary metabolites including steroids, terpenoids, alkaloids, and actogenins of both terrestrial and marine origin are discussed. Biogenetic theory is used extensively to emphasize the simplicity within the complexity of these natural products. Three lectures per week. An optional four-hour laboratory per week is also available. Prerequisite: Chemistry 130.

Ms. Erickson

Offered every other year

239 BIO-ORGANIC CHEMISTRY

This course deals with the chemistry involved in some biologically important reactions, particularly acyl and phosphoryl group transfer reactions, and oxidation-reduction reactions. Information from *in vivo* and *in vitro* studies of biological systems will be coordinated with knowledge developed from model studies with small molecules in an attempt to develop a cohesive picture of the chemical mechanisms of these biological reactions. The type of information that can be obtained from kinetic studies, isotopic substitution, transition state analogs, inhibition studies, model studies, etc. will be discussed. An in-depth discussion of the factors involved in enzymic catalysis is an important part of this course. Other topics include the biosynthesis of terpenes and steroids, and the chemistry of various cofactors including flavin, heme, biotin, etc. Prerequisite: Chemistry 130. Three lectures per week.

Mr. Novak

Offered every other year

242 NUCLEAR SCIENCE

This course covers the fundamentals of nuclear chemistry and physics: production, isolation, identification, and measurement of radioactive atoms. Three lectures and three laboratory hours per week. Prerequisite: permission of the instructor.

Mr. Brenner

Offered every other year

248 ENGINEERING AND CHEMISTRY

The course will give students some exposure to the principles of chemical engineering and the application of these principles to industrial processes. Topics to be covered include reactor design, mass and heat transfer, nonideal flow, mixing of fluids, diffusion, noncatalytic fluid-solid reactions, fluidization, heterogeneous catalysis, and surface chemistry. Prerequisite: Chemistry 130. Three lectures per week.

Mr. Wen

Offered every other year

250 ADVANCED INORGANIC CHEMISTRY

This course extends the concepts discussed in Chemistry 150 and places them on a more quantitative theoretical basis. Prerequisite: Chemistry 150 and 162 or permission of instructor.

Mr. Greenaway

Offered every other year

252 CHEMICAL KINETICS

This course extends basic theories of kinetics of reactions and discusses the major methods of studying reaction kinetics. Prerequisite: Chemistry 162 or 164.

Mr. Greenaway

Offered every other year

262 ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY

This course is designed as an introduction to the theory and application of EPR as a probe of structure and reactivity. Theoretical concepts are discussed in a manner that does not require a knowledge of quantum mechanics, and although a basic knowledge of chemistry is required, the course is designed to be suitable also for biology and physics majors. Prerequisite: permission of the instructor.

Mr. Greenaway

Offered every other year

270a and b BIOCHEMISTRY

Refer to course description for Biochemistry 270a and b. Also listed for credit as Biology 270a and b.

Mr. Brink, Mr. Nelson

Offered every year

272 PROTEIN CHEMISTRY

Refer to course description for Biochemistry 272.

Mr. Nelson

Offered every other year

278 PRINCIPLES OF PHARMACOLOGY

Refer to course description for Biology 278. Also listed for credit as Biochemistry 278.

Mr. Brink, Mr. Nelson, Mr. Wright

Offered every other year

290 SPECTROSCOPY

This course deals with the application of the most widely used forms of spectroscopy in the laboratory. Topics include NMR, EPR, IR, UV, visible, Raman, fluorescence, and photoelectron spectroscopy, mass spectrometry, and other techniques, as time permits. Emphasis will be placed on giving the student the practical knowledge necessary to operate spectroscopic instrumentation. Prerequisite: Chemistry 160. Prerequisite or corequisite: Chemistry 162 or 164. Two lectures and one laboratory per week.

Mr. Novak

Offered every other year

300 RESEARCH

Offered for variable credit.

Staff

Offered every semester

322 THERMODYNAMICS

This lecture course discusses applications of three laws of thermodynamics to chemical systems.

Mr. Wen

Offered every other year

323 STATISTICAL MECHANICS

This lecture course treats statistical mechanics as a bridge between molecular properties and thermodynamic functions, as applied to chemical systems.

Mr. Wen

Offered every other year

333 SYNTHETIC ORGANIC CHEMISTRY

The synthesis of organic compounds is discussed. Topics include the scope and limitations of general methods, mechanistic aspects, and stereochem-

istry. Special emphasis is placed on the total synthesis of natural products from design of methods to execution. Three lectures per week. Prerequisite: Chemistry 130.

Ms. Erickson

Offered every other year

344 SELECTED TOPICS IN ADVANCED NUCLEAR CHEMISTRY

This is a discussion of the current experimental and theoretical literature in nuclear reactions, fission, and nuclear spectroscopy. Prerequisite: Chemistry 242 or permission of instructor.

Mr. Brenner

Offered every other year

350 SEMINAR

This seminar consists of reports on research and discussions of recently published work. Not offered for credit.

Guest Lecturers, Staff, Graduate Students

361 MOLECULAR STRUCTURE

This course concerns physical methods relevant to the determination of molecular structure and the characterization of molecular motion. Several methods will be discussed although the emphasis will be on magnetic resonance.

Mr. Jones

Offered every other year

369 ELECTRONIC SPECTROSCOPY

This is an introduction to the study of ultraviolet and visible absorption spectra as well as emission spectra. Prerequisite: permission of instructor.

Mr. Wen

Offered every other year

379 SPECIAL TOPICS

This seminar course consists of research and literature; reports by graduate students and undergraduate honors candidates.

Staff

Offered every semester

380 RESEARCH CONFERENCE

This conference consists of informal reports of research work being done in the laboratory. Not offered for credit.

Staff, Graduate Students

Classics

PARTICIPATING FACULTY

Paul F. Burke Jr., Ph.D., Associate Professor of Classics

The following courses in classical humanities are taught in English and are recommended to students as part of their general education and to majors in comparative literature, English, foreign languages and literatures, fine arts, history, music, and philosophy. Classics 190 is an introductory course in the ancient Greek language; directed readings in Latin and Classical Greek may be arranged with Professor Burke.

COURSES

110 ANCIENT GREEK ART AND ARCHITECTURE

This course is an intensive introduction to the art and architecture of the ancient Greek-speaking world. It will cover the painting, sculpture,

pottery, and minor arts as well as the civic and religious architecture of ancient Greece in the Mycenaean, Orientalizing, Archaic, Classical, and Hellenistic periods with appropriate attention to Greek colonial art and architecture in Sicily, Southern Italy, and the Hellenized Eastern Mediterranean countries. Special attention will be paid to the continuity and originality of the Greek achievement in the visual arts and in architecture. Field trips to the Worcester Art Museum, the Boston Museum of Fine Arts, and perhaps to New York's Metropolitan Museum are planned as part of the course work.

Mr. Burke

Offered every other year

111 ROMAN ART AND ARCHITECTURE

A survey of the artistic and architectural accomplishments of ancient Rome and of the many peoples who made up the Roman Empire, beginning with the origins of Rome in Bronze Age central Italy. The course will treat Roman relations with Etruscans, Greeks, and other non-Latin-speaking peoples as these interactions manifest themselves in Roman art and architecture. The course will conclude with an examination of the effect of Judaeo-Christian values on the formerly pagan Empire, the appearance of a Christian Roman government, and the development of distinctively Christian forms of Roman art and architecture. Among topics to be considered are: the unique aesthetic and mechanical accomplishments of Roman architects and engineers; Etruscan painting and sculpture; Roman wall painting; portraiture as a Roman art form; Roman art in the provinces of the Empire; ancient city planning; the influence of Roman art and architecture on post-Classical culture; the problem of originality versus derivation in Roman civilization. Museum visits are planned as in Classics 110 above.

Mr. Burke

Offered every other year

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHEOLOGY

This course is a general introductory survey of ancient Greek culture and history covering: the Bronze Age civilizations of Crete and Mycenae, the classical Greek city-states, the conquests of Alexander, and the emergence of international urban culture in the Mediterranean world. Readings in the works of ancient authors will be chosen to demonstrate cultural and intellectual life, political developments, social and family structure, and religion. Many lectures, such as those on art, architecture, and archeology, will be illustrated by slides. Also listed for credit as History 121.

Mr. Burke

Offered every year

122 INTRODUCTION TO ROMAN CULTURE, ART, AND ARCHEOLOGY

This is a survey of ancient Roman culture and history, continuing the work of Classics 121, and covering the rise of Rome in the Hellenistic world, the Roman Republic and Empire, the end of the ancient world, and the beginnings of Christian Europe. Reading in the works of appropriate ancient authors in translation will be supplemented by secondary texts and by lectures on ancient art, politics, and religion. Many lectures will be illustrated by slides. Classics 121 is not a prerequisite but is recommended. Also listed for credit as History 122.

Mr. Burke

Offered every year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY

This course is a study of ancient Near Eastern, Greek, and Roman literary texts (along with some modern ones), which are particularly useful for gaining an understanding of the function of myth in Graeco-Roman antiquity as a vehicle for artistic communication and social commentary. The archaeological and anthropological background of the ancient world will be sketched in, and the religious and philosophical implications of myth will be discussed. The course will pay particular attention to the influence of ancient mythology on later European culture, especially literature and art. Various modern approaches to myth analysis will be touched upon: structural, psychoanalytical, and literary. Many of the lectures will be illustrated by slides.

Mr. Burke

Offered every other year

135 CLASSICAL GREEK TRAGEDY

A survey of tragic drama in Classical Greece. The course treats the distinctive role of drama in ancient Greek society, staging and production of Classical tragedy, and problems of interpreting the texts of plays (in translation) by Aeschylus, Sophocles, and Euripides. The course will also pay appropriate attention to mythology as the primary subject of Greek tragedy.

Staff

Offered every other year

150 NARRATIVE IN ANCIENT HISTORICAL WRITING

This is a survey of ancient modes of writing and interpreting history. By reading selected works of ancient authors in translation, students will examine the influence of myth, propaganda, and rhetorical stereotyping on the portrayal of characters and events in ancient biographical and historical writing. Topics considered will include: narrative and stylistic technique, rhetoric, character portrayal, propaganda and reliability, the manipulation of events for artistic purposes, the effect of the author's intent on his work, and the presence or intrusion of the author's personality. The course will require reading, in translation, selections from Herodotus' *History*, Thucydides' *History of the War between Athens and Sparta*, Plutarch's *Lives*, Josephus' *History of the Jewish War*, and Tacitus' *Annals and Histories*. Reference will also be made to Old and New Testament ideas of patterns and purpose in history and to poetic treatments of history by authors such as Homer and Virgil. Also listed for credit as History 150.

Mr. Burke

Offered every other year

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

This is a historical and cultural survey of the complex and tumultuous period between the foundation of the Roman Empire and the sixth century AD, when medieval culture was established in Europe. Two themes will dominate the course: (1) the struggle between pagan or classical modes of thought and Judaeo-Christian beliefs and values, and the assimilation of each in the other; (2) the tension within the Christian movement between spiritual and practical concerns as the new religion came to dominate Western culture. The interaction in this colorful and fascinating period of Graeco-Roman, Jewish, and Christian cultures will be approached by reading ancient authors in translation, by studying appropriate secondary sources, and by examining representative samples of the visual arts of the period in lectures illustrated by slides. Other topics covered will include: the Jewish and Middle Eastern roots

of Christianity, the position of Judaea as a subject state within the Roman Empire and its attempts at political autonomy, the diverse religions and philosophies current in the Mediterranean world, the establishment and significance of the idea of Rome in Western civilization. Also listed for credit as History 160 and Judaic Studies.

Mr. Burke

Offered every other year

190 INTRODUCTION TO PHILOSOPHICAL GREEK

A beginner's course in the language of Classical Greece. The course covers the grammar and syntax of the ancient Greek language with the goal of enabling students to read, in the second semester, selections from ancient Greek authors—particularly such philosophical texts as Plato's *Apology of Socrates* and *Crito*. Course readings, in Greek, may also include selections from Homer, Herodotus, and the New Testament, depending on class interests. Indivisible course.

Mr. Burke

Offered every year

Comparative Literature

PARTICIPATING FACULTY

Michael K. Spingler, Ph.D., Associate Professor of French, Program Director

Raymond E. Barbera, Ph.D., Professor of Romance Languages, Emeritus

Kenneth Hughes, Ph.D., Professor of German and Russian

Walter Schatzberg, Ph.D., Professor of German

Paul F. Burke Jr., Ph.D., Associate Professor of Classics

Marvin A. D'Lugo, Ph.D., Associate Professor of Spanish

Hartmut Kaiser, Ph.D., Associate Professor of German

Dorothy Kaufmann-McCall, Ph.D., Associate Professor of French, Assistant Dean and Director of International Programs

J. Fannin King, M.A., Associate Professor of Romance Languages, Emeritus

William Ferguson, Ph.D., Assistant Professor of Spanish

Marilyn Jiménez, Ph.D., Assistant Professor of Spanish

Leo Ortiz-Minique, M.A., Visiting Instructor of Spanish

Gale H. Nigrosh, M.A.T., Lecturer in French and Linguistics

ADJUNCT FACULTY

Martyn J. Bowden, Professor of Geography and Adjunct Professor of Comparative Literature

Bernard Kaplan, Professor of Psychology and Adjunct Professor of Comparative Literature

Albert A. Anderson, Associate Professor of Philosophy and Adjunct Associate Professor of Comparative Literature

John Conron, Associate Professor of English and Adjunct Associate Professor of Comparative Literature

Wesley M. Fuller, Associate Professor of Music and Adjunct Associate Professor of Comparative Literature

Tamar March, Adjunct Associate Professor of French and Comparative Literature

UNDERGRADUATE PROGRAM

The Major in Comparative Literature: Program Description

Comparative Literature offers the student a program of studies in the

formation and development of the Western mind as it is expressed through poetry, prose, drama, film, and related arts. Offered by the Department of Foreign Languages and Literatures, the program is by nature interdisciplinary and has strong ties with several other departments in the University as well as with the Program for Humanistic Studies. In addition to the core of courses offered by the Department in comparative literature and literatures in foreign languages (French, German, Hebrew, Russian, and Spanish), the student is encouraged to take courses in English, humanistic geography, psychology, and visual and performing arts. One of the particular aspects of the program is a working approach to the text combined with a critical approach. This may take the form of play production; seminars in the translation of lyric poetry and drama; and supervised work in the contemporary theory of the relationship between text, performance, and spectator positioning and response.

The curriculum in comparative literature has five components:

1. *Foundation courses*: These courses, which are, primarily, part of the college's Introductory Program, focus on the traditions and sources of our culture. Foundation courses stress the relationship between the literature of the modern period and that of the classical, medieval, and Renaissance periods.
2. *Courses in cultural narrative*: These are courses in literature, film, drama and related arts, including courses given in the foreign language of a given country. The general concern of these courses is a study of the ways in which literature, film and drama shape the way we perceive ourselves and the culture in which we live. Of particular importance in this group are courses in the aesthetics, criticism, and theory of narrative, film, and drama as well as courses exploring the relationship between literature and philosophy, literature and politics, literature and psychology, and literature and fine arts.
3. *Cluster courses in advanced topics*: These are courses normally offered to juniors and seniors. In most cases they are interdisciplinary clusters offered either in cooperation with the Program for Humanistic Studies or by faculty within the Department of Foreign Languages. Examples of possible cluster themes are: American Space and its European Roots; Centers of Creativity (Berlin, Madrid, Paris, and Vienna); and The European Imagination Between the Wars: Dada, Expressionism, and Surrealism. Cluster themes will vary from year to year. We expect that these courses will lead to the definition of capstone projects for the major.
4. *Capstone projects*: Advanced work done independently by individual students with the supervision and approval of comparative literature faculty. A capstone project could include a senior thesis, a translation of a literary work, or work in foreign language play production.
5. *The Comparative Literature Colloquium*: The Colloquium serves as the center within which students and faculty of the Comparative Literature Program meet to discuss the progress of capstone projects and the development of themes for future cluster courses. It is primarily a place for the sharing of ideas and perspectives which may originally have developed within the context of a particular discipline or research topic. The Colloquium frequently invites guests from outside the University, as well as from other Clark departments, to make presentations and lead discussions.

Program Requirements

1. At least one course from the group of foundation courses.
2. At least six courses from the group of courses in cultural narrative. Five of these courses must be taken beyond the intermediate level (Language 12) in one or more foreign languages. A cluster course from group three may be substituted for one of the courses in cultural narrative. In some cases, courses at the level of Language 12 may meet this requirement if approved by the major adviser.
3. At least one cluster course offered by the Comparative Literature Program or the Program for Humanistic Studies.
4. A capstone project or honors thesis.
5. A number of related courses to be selected by the student in consultation with his/her adviser.

COURSES

110 PROBLEMS IN COMPARATIVE LITERATURE

This is an introductory course in comparative studies of literature from a problem-oriented perspective. The course will revolve around five major issues:

- 1) The Tragic View
- 2) The Challenge of Faith
- 3) Man the Measure
- 4) The Search for Identity
- 5) The Esthetics of Ambiguity

Readings will include selections from Sophocles, Job, Pico, Pascal, Pope, Nietzsche, Mann, Hofmannsthal, Rilke, Hesse, Kafka, Joyce, Bernanos, Beckett, and Cortazar. Recommended for freshmen and sophomores.

Mr. Schatzberg

Offered every other year

118 MASTERPIECES OF WORLD LITERATURE

This is a broadly-based humanities course which surveys the development of European literature and thought. Texts to be considered, in English translation, have been chosen to illustrate some of the most important stages in the evolution of the Western mentality. The course will be jointly taught, with contributions from faculty members from classics, English, philosophy and theater arts. Reading during the fall semester will include selections from Homer's *Odyssey*, the Old Testament, Plato's *Dialogues*, classical Greek tragedians, Vergil's *Aeneid*, Petronius's *Satyricon*, and Dante's *Inferno*.

Mr. Burke

Offered every other year

119 MASTERPIECES OF WORLD LITERATURE

This course carries forward from the Renaissance the study of major literary works in the context of the various stages of the civilization that produced them. Readings will include selected works from Petrarch, Cervantes, Shakespeare, Molière, Voltaire, Goethe, Byron, Shelley, Melville, Conrad, and Eliot.

Mr. Schatzberg

Offered every other year

120 THE EPIC JOURNEY

A comparative and cross-cultural examination of the epic as a recurring literary form. Special attention will be paid to the various forms and functions of the hero's journey. Epic journeys may or may not have

goals which are clear to the hero; they may be wanderings in unknown parts of the physical world, or they may be representative of various types of spiritual striving and trial. Our task will be to define and articulate the various types of epic voyage and to relate their differences and similarities to the values of the societies which gave rise to them. Included in the term's reading will be selections (in English translation) from Homer's *Odyssey*, Vergil's *Aeneid*, Apollonius's *Argonautica* and Apuleius's *Golden Ass*.

Mr. Burke

Offered every other year

140 CITIES AND CULTURE

Refer to course description under Geography 140.

Mr. Bowden

145 THE ANCIENT NOVEL

Refer to course description under Classics 145.

Mr. Burke

149 AESTHETICS

Refer to course description under Visual and Performing Arts.

Mr. Anderson

150 MODERN GERMAN CINEMA

Refer to course description under German 150.

Mr. Schatzberg

160 FRENCH AND SPANISH CULTURE SEEN THROUGH CINEMA

The cinematic medium has been considered both as a reflector of cultural values and as a formulator of them. This seminar will explore the ways in which film culture has evolved in France, Spain, and Spanish America and the means through which a critique of social customs and values has been formulated. Screenings will compare the similarities and differences of approach by various French and Spanish language filmmakers over the last half century. Emphasis will be given to the political implications of cinema as a catalyst for social change. Attendance at ten screenings of exemplary French and Spanish films will be required.

Mr. D'Lugo, Mr. Spingler

Offered every other year

165 ELEMENTS OF DRAMA: SCRIPT, STAGE AND AUDIENCE

This is a workshop course which uses scene work as a critical approach to the text. The basic premise of the course is that the varied meanings of the script may be elaborated, extended, and altered through performance. Texts will be chosen to illustrate a variety of major figures, periods, and styles: Greek tragedy, Molière, Shakespeare, realism, and the contemporary avant-garde. Throughout the course the particular perspectives of playwright, director, actor, and spectator will be emphasized.

Mr. Spingler

Offered every other year

168 MUSIC IN GERMAN LITERATURE AND THOUGHT

Refer to course description under German 168.

Mr. Kaiser

169 PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE

Refer to course description under Psychology 169.

Mr. Kaplan

170 IN-FORM-ATION: MEANING THROUGH STRUCTURE IN MUSIC AND THEATER

This course explores the ways in which form creates meaning. A set of common concepts is used to look at qualities of structure in a variety of creative experiences. Our goal is to develop in the student the ability to recognize the significance of forms, whether they occur in art or in everyday life. The course assumes that some of the most meaningful insights into a particular subject may be gained by bringing to bear upon it the critical methods of other areas of knowledge. The course is also listed for credit as Music 170.

Mr. Spingler, Mr. Fuller

Offered every other year

172 EUROPEAN ROOTS OF AMERICAN SPACE: THE CROSS-ATLANTIC EXPERIENCE

Refer to course description under Geography 172 or English 172.

Mr. Bowden, Mr. Conron

175 LITERATURE AND EXISTENTIALISM

The course is an introduction to major writers and themes of existentialism from Dostoyevsky, Kierkegaard, and Nietzsche to Sartre, Camus, and Beckett. Beginning with a study of the cultural origins of existentialism as a distinctively modern, European sensibility, we will explore why and how existentialist thought has found expression with unique appropriateness as both philosophical literature and literary philosophy. Prerequisite: permission of the instructor.

Ms. Kaufmann-McCall

Offered every other year

180 SOCIETY AND THE LITERARY IMAGINATION: THE EUROPEAN NOVEL IN THE NINETEENTH AND TWENTIETH CENTURIES

This course will examine the interaction between literature, ideological motifs, and the social context for the European novel of the nineteenth and twentieth centuries. Taking as a point of departure the theoretical perspectives of such critics as Georg Lukacz and René Girard, the course will study the representation of society in exemplary works by Balzac, Dickens, Dostoyevski, Henry James, Max Frisch, and Camus. The questions considered will include problems in the representation of reality in the fictional construct; the dynamics of class struggle; the relations between the individual and collective consciousness; and the metaphors of freedom and imprisonment.

Ms. March

Offered every other year

193 INTERPRETATION OF DREAMS

Refer to course description under Psychology 193.

Mr. Kaplan

197 THE FAUST THEME IN LITERATURE AND MUSIC

Refer to course description under German 197.

Mr. Kaiser

215 MARXISM AND ART

The course considers two sides of the relationship of Marxism to art: (1) how, as a philosophical foundation of political entities, Marxism affects the kinds of art produced under its sponsorship; and (2) the kinds of critical theories and strategies which, as an analytical tool,

Marxism generates. The course presents a broad survey of Marxist considerations of art and literature. Among the topics discussed are: the alternation of cultural repression and "thaw," the historical development of art theory from Marx to the present, Stalinism and the distortion of the human image in Marx, the theory and practice of socialist realism, the critique of modernism and formalism, and the alienation of the artist in contemporary capitalist and socialist society. A basic acquaintance with both the classics of Marxist thought and the fundamentals of literary and art criticism is presupposed.

Mr. Hughes

Offered every other year

220 FRENCH AND AMERICAN FEMINISM: A CROSS-CULTURAL STUDY

The seminar will be an exploration of social, linguistic, and philosophical differences in French and American feminist writing from a cross-cultural perspective. Both fictional and theoretical texts will be studied. The course is intended as a workshop for upperclassmen and graduate students. Each student will be expected to develop a research project in her or his particular area of interest. Readings will include Colette, *The Vagabond*; Simone de Beauvoir, *A Very Easy Death* and *The Second Sex*; Elaine Marks, ed., *Contemporary French Feminism*; Monique Wittig, *Les Guérillères*; Charlotte Perkins Gilman, *The Yellow Wallpaper*; Kate Chopin, *The Awakening*; Shulamith Firestone, *The Dialectic of Sex*; Dorothy Dinnerstein, *The Mermaid and the Minotaur*; Adrienne Rich, *Of Woman Born* and selected poems. (See also Women's Studies.)

Ms. Kaufmann-McCall

Offered every other year

230 LANGUAGES OF THEATER

This course, using a workshop format, examines the nature of theatrical communication, the problem of theatrical signs, the relationship between script and vocal and physical gesture, differences and affinities between everyday talk and dramatic dialogue. Analysis and scene work concentrates on a limited number of plays chosen from the classical and the avant-garde repertory in order to explore the problem of realistic and antirealistic styles in theater. Theroretical readings will include Artaud's *Theater and its Double*, Grotowski's *Towards a Poor Theater*, and Brook's *The Empty Space*. Some work will be done with labanotation, a system for the analysis of theatrical movement.

Mr. Spingler

Offered every other year

240 STUDIES IN NARRATIVE FORM: CLUSTER COURSE

An exploration of narrative both structurally and historically with an emphasis on literary fiction as a particular kind of narrative form. We will follow the evolution of narrative in Western literature through the aesthetics of realism and modernism, as they have been elaborated in fiction and critical theory. The relevance of nonliterary narrative to the understanding of fiction will also be discussed. Texts will include both novels and films.

Mr. D'Lugo, Mr. Conron

Offered every other year

250 LYRIC MASTERPIECES OF SPAIN AND HISPANIC AMERICA

A study of representative lyric texts selected from all centuries of Hispanic literature, with accompanying investigations into other cultures which influenced these compositions or were influenced by them. Crosslisted as Spanish 250. Basic poetic texts will be read in Spanish.

No final examination; a term paper will be required. Prerequisite: permission of the instructor. Fall 1982.

Mr. Ferguson

Offered every other year

251 SEMINAR IN LITERARY CRITICISM

This course seeks to develop critical sensibilities by concentrating on three major modes of literary criticism: textual, psychoanalytic, and Marxist. An effort is made to define the usefulness and limitations of each mode. We read and discuss both original sources (Freud, Marx, etc.) and a wide range of criticism based on their methods. An attempt is made to demonstrate that a complete critical engagement with a literary work must start from a close examination of the text itself, proceed to a consideration of the interaction between text and the author's life and mind, and from there, to an investigation of the social setting that conditions text, life, and mind. The course is therefore structured in three "levels" dealing with text, psychobiography, and society. Students write one seminar paper, but do so in three stages; this affords an opportunity both to rewrite prior stages and constantly to incorporate new material. In order to unify discussion and development, the seminar centers around a thorough critical occupation with the works, life, and society of Franz Kafka. Primary material includes his short stories, his novel *The Trial*, *Letter to His Father*, and *Letters to Milena*.

Mr. Hughes

Offered every other year

252 HISTORY, MYTH, "MYTHOLOGIES": COMPARATIVE FICTION OF THE CARIBBEAN

This course offers an introduction to the complex, multi-faceted world of the Caribbean through the works of major contemporary novelists from the English, French, and Spanish-speaking Caribbean. Topics to be covered include political fragmentation, insularism and racial relations. Special attention will be paid to the attempt to describe the essence of the Caribbean in the aftermath of decolonization. This question is inextricably bound to the nature of fictional representation; thus, we shall also examine the use of history, myth, and the semiotics of popular culture ("mythologies" in Barthes' sense) to portray the reality of the Caribbean. Students are encouraged to bring to bear the perspective of their discipline or area of interest upon the works to be discussed. Crosslisted as Spanish 252.

Ms. Jiménez

Offered every other year

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM AND SYMBOL

Refer to course description under Psychology 276.

Mr. Kaplan

277 THE CREATIVE PROCESS

Refer to course description under Psychology 277.

Mr. Kaplan

280-281 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY AND THEORY OF INTERPRETATION

Refer to course description under Psychology 280-281.

Mr. Kaplan

Computer Science

An undergraduate major in computer science is currently offered in the Department of Mathematics and Computer Science. Requirements for this major are discussed in the listings for that department.

Students who are not candidates for the major in computer science, but who wish to take a course concentration in computer science, should consult the mathematics and computer science listings for specific course offerings. All interested students are urged to consult members of the Department of Mathematics and Computer Science for help in course selection.

Economics

DEPARTMENT FACULTY

Roger C. Van Tassel, Ph.D., Professor of Economics, Department Chair

Howard W. Nicholson, Ph.D., Professor of Economics

Attiat F. Ott, Ph.D., Professor of Economics, Earhart Faculty Sponsor

E. C. H. Veendorp, Ph.D., Professor of Economics

George E. Hargest, M.B.A., Associate Professor of Economics, Emeritus

Robert C. Hsu, Ph.D., Associate Professor of Economics

Frank W. Puffer, Ph.D., Associate Professor of Economics

Maurice D. Weinrobe, Ph.D., Associate Professor of Economics

Stephen A. Baker, Ph.D., Assistant Professor of Economics

Don M. Shakow, Ph.D., Assistant Professor of Economics

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions and to develop habits of systematic thought.

Goals of the Major

The rationale for economics majors can be stated briefly and simply. We believe economics offers a useful insight into a better understanding of fundamental human behavior in the decision-making process and a great variety of national economic issues. While we recognize that economics alone seldom gives answers, we also feel that there are few issues, at least in the social sciences, in which the contribution of fairly formal economic analysis does not play a necessary role. There are obviously some advantages in an economics major besides a more broadly accepted educational value. It is a good preparation for law, business, and a number of other professional and not so professional careers. However, the emphasis of our program (and its rationale) is the educational one. The major in economics is clearly devised to help the student think and develop. The student takes a sequence of courses that should develop an appreciation of both the strengths and limitations of the subject. Finally, a student "who gets it all" in his first course has really accomplished much of this objective. For almost everyone,

however, some repetition, reinvolvement, and greater experience in additional and more advanced courses is required to develop the necessary mixture of confidence and competence.

Economics 10, Issues and Perspectives, is prerequisite for all 100-level courses and for Econ 11, Principles of Economics. Econ 11 is prerequisite for 200-level courses in the department. All majors in economics must take Econ 10, 11, and Econ 205.1, and 205.2, Intermediate Theory. Econ 160, Statistics, is strongly recommended for all majors and required for some tracks. Students in their last three years normally will be expected to take no less than 12 courses and no more than 19 courses in economics and courses appropriate to their track. In addition, all majors are required to have a department adviser to assist in developing a program of study. Within the tracks, students may elect a variety of options. These options are built on a common core of analysis required of all majors and extend to include a coherent program of courses offered within the department and in related departments. The options are: economics professional, business, prelaw, and the expanded major. Students should refer to the *Undergraduate Economics Handbook* for further information regarding requirements.

The department offers two separate honors programs. Selected students may engage in independent study off campus for a semester and summer, preferably during the junior year. These students work for business firms or government agencies in applied economic research. A semester's credit is awarded. In addition there is an on-campus program. Juniors in their second semester take an honors course and, as seniors, may continue and complete the honors program with the writing of a senior thesis.

Some courses may be offered only in alternate years. Detailed course descriptions are available at the department office and at the Registrar's Office.

GRADUATE PROGRAM

The University offers facilities for graduate study and research leading to the doctor of philosophy in economics.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, up to \$4,300 for part-time work (one-half-time).

Two full academic years of graduate work, or its equivalent in part-time work, is necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. "In residence" is broadly defined as work done at Clark University under the immediate, personal supervision of at least one member of the University faculty.

All candidates for the Ph.D. in economics are required to demonstrate proficiency in econometrics and mathematical economics, i.e., by passing designated courses offered in the department or, in the case of prior preparation, by passing a test given by the department.

Each student in the Ph.D. program is required to demonstrate proficiency in economic theory. The economic theory requirement includes

micro-theory, macro-theory, and the history of doctrine. Use of mathematics may be required in the examination in economic theory. The student satisfies the economic theory requirement by passing course examinations.

Upon completion of economics theory and the required special fields, the student is admitted to candidacy for the Ph.D. These fields may be selected from among the following: monetary economics, public finance, industrial organization, international trade, comparative economic systems, advanced theory, regional economics, or one field selected from related subjects. If advanced theory is selected as a special field, the level of performance required is substantially higher than the general requirement in economic theory for all Ph.D. candidates. The choice of fields must be cleared in advance with the graduate student adviser. Not all graduate field courses are offered each year. At least two field courses are offered annually. Typically, two fields are taken during the second year, and the remaining field requirements are completed, along with beginning the dissertation, during the third year.

Soon after having completed the field requirements, each student is expected to develop a written prospectus of his/her dissertation and then to make a presentation before an informal conference with the dissertation committee demonstrating *both* the extent of knowledge of his/her dissertation field and the feasibility of the proposed topic.

Upon completion of the dissertation in a form acceptable to the committee, the candidate will make a copy of the dissertation available to the department, the staff, and graduate students in the department. After a period of approximately two weeks, to permit a wider reading of the dissertation within the department, the candidate will present the dissertation at a seminar open to all staff and graduate students in the department. Final approval of the dissertation will be granted by the committee after consideration of any suggestions of changes or challenges arising from the final seminar. Unless the dissertation is completed and defended within five calendar years from admission to candidacy, the certifying examinations must be taken again.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written. Published articles may be accepted by the department instead of a dissertation.

Some teaching experience at Clark, or such other teaching as the department may regard as equivalent, is prerequisite to the doctor's degree.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of the required Ph.D. "special fields"; or, in the case of students who do not continue toward the Ph.D., upon satisfactory completion of an approved program of course work, the writing of an M.A. thesis, and an oral examination.

A student should discuss her/his plans with the graduate student adviser on or before registration day and secure approval of his/her course program.

INSTITUTE FOR ECONOMIC STUDIES

The Institute for Economic Studies, funded with an initial grant from the John M. Olin Foundation, began its operation in January 1980. The institute's main objectives are to:

1. research significant economic issues and propose policy options to deal with these issues;

2. disseminate the results of the research—particularly its policy recommendations—to a broad audience.

In addition, the institute provides a framework within which new curricula and teaching methods may be developed. Seminars are designed to stimulate the exchange of ideas between members of the institute, the University practitioners, and media personnel as well as professionals from other disciplines. The institute's directors plan to establish a Scholars in Residence Program, which will bring distinguished economists and business leaders to Clark.

Professor Van Tassel is director of the Institute for Economic Studies; Professor Ott is director of policy studies.

COURSES

10 ISSUES AND PERSPECTIVES

By analysis of important current policy issues, the student is introduced to the vital contribution economics can make to systematic thought and understanding. Rather than emphasizing economic theory, the course begins with issues in the social sciences that are of obvious and important concern. From a study of issues, the course proceeds to show how development and use of some very basic economic concepts can aid materially in the analysis. Open to freshmen. Multiple sections.

Staff

Offered every semester

11 PRINCIPLES OF ECONOMICS

This is an introduction to economic analysis. This course develops a basic set of economic concepts utilized in the 200-level courses offered in the department. Basic elements of price and income theory are emphasized. Policy questions are treated both to reinforce concepts and to illustrate applicability of the analysis. Open to freshmen. Prerequisite: Economics 10.

Staff

Offered every semester

88 DIRECTED READINGS

Offered for variable credit.

Staff

Offered every year

89 SPECIAL PROJECTS

Offered for variable credit.

Staff

Offered every year

108 INTERNATIONAL FINANCIAL DEVELOPMENTS

This course traces the development, roles, importance, and problems in international finance. A multinational world requires an efficient international financial system. Yet, design of a system that permits orderly international trade and retains national identity and autonomy in vital areas of policy is a difficult and incomplete task.

Mr. Baker

Offered every other year

109 SOCIALIST THOUGHT

This is an exposition of socialist economic theory as a coherent body of knowledge uniquely suited to the analysis of major socioeconomic issues.

Mr. Shakow

Offered every other year

113 MONETARY ECONOMICS: THEORY AND POLICY

The theory of money and its role in the modern economy are examined as are determinants of the supply of money and analysis of the role of monetary policy in stabilization policy. Commercial banks and non-bank financial intermediaries are studied.

Mr. Weinrobe

Offered every year

121 INTRODUCTION TO ACCOUNTING PRINCIPLES

This is a first course in financial accounting designed to meet academic needs of: (a) students who will take only one course in accounting to obtain a good understanding of financial information such as that which appears in standard financial reports, (b) students who will be interested in work in managerial accounting as well as financial accounting, (c) students who will continue the study of accounting in intermediate and advanced courses. This course may be considered the equivalent of Management 201, Introduction to Accounting; a student cannot receive credit for both courses.

Mr. Nicholson

Offered every year

122 CORPORATE FINANCE AND INVESTMENT PRINCIPLES

This course is an introduction to principles of business finance and investment. The course begins with an analysis of the finance function in business and concludes with a study of investment principles viewed from the standpoint of both the firm and the investing public. Topics covered in connection with the finance function include factors affecting need for funds and sources of funds. Study of investment principles focuses on appraisal of capital investment opportunities and the nature and functioning of capital markets, such as the organized exchanges for stocks and bonds. Prerequisite: Economics 121 or permission of the instructor.

Mr. Nicholson

Offered every year

123.4 SPECIAL PROBLEMS: ENVIRONMENT AND ENERGY

This is an analysis of major problems that have arisen as a result of environmental concerns and the energy shortage. Emphasis will be placed on problems stemming from external diseconomies, supply demand disequilibria, and technological change.

Mr. Shakow

Offered every other year

123.5 CONTEMPORARY POLITICAL ECONOMIC PROBLEMS: OPINION AND ANALYSIS

The course will examine the basis of intergroup differences in attitudes on questions of economic policy, emphasizing the function of values, perception of fact, and analytical abilities. Also listed for credit as Education 223.

Mr. Van Tassel

Offered every other year

124 ECONOMIC THOUGHT AND MODERN CIVILIZATION

This course is broadly interdisciplinary. It emphasizes the relationship between economics and related areas, such as philosophy, ethics, political science, sociology, mathematics, and statistics. Beginning from the perspective of economic thought, the course traces developments in economic analysis, showing how economic analysis has affected and been affected by the contact with other disciplines. The course considers how modern economic thought has come to diverge in essential aspects

from the ideas of social philosophers like Adam Smith and Karl Marx and emphasizes what scientific economic analysis does and does not enable us to understand about modern social problems and issues.

Mr. Nicholson

Offered every year

126 PUBLIC POLICY TOWARD BUSINESS

This course examines the various types of industrial organization, the degrees of monopoly in competition, and the development of public policies that affect business. Among issues traced will be the development of anti-monopoly regulation, consumer protection, and public utilities. Business performance and government regulation will be related to criteria from economic theory.

Mr. Veendorp

Offered every other year

128 ECONOMIC DEVELOPMENT

See course description under Economics 228.

Staff

Offered every other year

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT

This course will be a review of political economic problems associated with such natural resources as agricultural land, energy goods, and minerals—as well as a resource common to all of us, our natural environment. Typical issues to be analyzed include the assessment of environmental impacts within a market oriented economy, the potential role of international cartels in resource allocation, and the assessment of nuclear generation from an economic standpoint. Also listed for credit as Science, Technology and Society 155.

Mr. Shakow

Offered every other year

160 INTRODUCTION TO STATISTICAL ANALYSIS

This course examines basic concepts and techniques of statistical method in economic analysis: descriptive statistics, permutation and combination, an introduction to probability theory, sampling distribution, standardized normal distribution and other related distributions, simple and multiple regression, simple forecasting, and statistical decision-making.

Mr. Puffer

Offered every year

176 COMPARATIVE ECONOMIC SYSTEMS

Many different political and economic systems exist in the world. Most systems are continually undergoing changes that gradually, but importantly, affect their performance. This course surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Mixed economies, market socialist economies, and centrally planned economies are examined.

Mr. Hsu

Offered every year

177 CHINESE POLITICAL ECONOMY

This course is a comprehensive survey of the Chinese economy—its development, institutions, and policies. The major topics to be covered are: (1) economic heritage; (2) Maoist and post-Mao economic development: ideologies and strategies; (3) rural and agricultural development; (4) industrial development; (5) planning and resource allocation;

(6) human resources: population, health care, education; (7) international economic relations.

Mr. Hsu

Offered every year

196 ECONOMICS AND AMERICAN SPORT

Refer to course description under Geography 196, Culture and American Sport, and Psychology 196, the Psychology of American Sport.

Mr. Puffer

Offered every other year

205.1 MICROECONOMIC THEORY

The objective of the course is to describe and analyze how a market-oriented economy functions in answering the five basic economic questions. These are: (a) What commodities to produce? (b) How much of each to produce? (c) What productive techniques to use and how to provide incentive? (d) How to distribute the output among the various members of society? (e) What provision to make for the future? Interspersed with the theory, the course contains frequent examples that demonstrate the use of microeconomics in solving problems faced by the decision-making unit in both the private and public sectors.

Staff

Offered every year

205.2 MACROECONOMIC THEORY

This course focuses on the forces that affect the overall performance of the economy. It is a study of the determinants of economic activity (such as consumption, investment, government purchases, and exports); measures of economic performance (such as the level and rate of growth of national income and product, the level of employment and unemployment, the general price level, and the nation's balance of international payments). In addition, the course deals with specific, current economic problems facing the U.S., discusses public policies instituted to deal with them—their success or failure—and the repercussions of some of these policies on world economies.

Staff

Offered every year

207 INTERNATIONAL ECONOMICS

This course applies and develops concepts of economic theory to such questions as: determinants of international and regional specialization and trade, the theory of tariff intervention, the balance of payments, adjustment forces and disequilibria, and application of theory to important issues of international trade.

Mr. Van Tassel

Offered every year

209 MARXIST ECONOMIC THEORY

This is an introduction to Marxist economic theory. A comparison will be made between the development of Marxist and neoclassical economic analysis. Prerequisite: Economics 11 and permission of instructor.

Mr. Shakow

Offered every other year

215 PUBLIC EXPENDITURES

This course examines issues and priorities related to the size and composition of public expenditures. Evaluation of federal budget expenditures according to criteria of cost-benefit analysis and cost effectiveness. Property rights, third party effects, and how public policy deals with them are also examined.

Ms. Ott

Offered every other year

216 TAX SYSTEMS AND POLICIES

This course outlines federal taxes and tax policies in the United States. It explains emerging issues in federal taxation—tax equity, the effect on income distribution, the relative tax burden of the rich and the poor and tax reforms—and discusses alternative solutions. Taxes as a tool for economic stabilization and growth are also analyzed. Prerequisite: Economics 11.

Ms. Ott

Offered every other year

228 ECONOMIC DEVELOPMENT

This course will examine the major theories of economic development, the major problems confronting the less developed countries, and the policies and strategies appropriate for economic development. The purposes are to show the relevance of economics in international development, to promote an understanding of the problems of the less developed countries, and to help provide analytical skills useful to students interested in a career in international development. Offered in alternate years with 128.

Mr. Hsu

Offered every other year

235 ECONOMICS OF HOUSING

An examination of the nature of housing, including an investigation of supply and demand in the housing market, the relationship between housing and the aggregate economy, the role of housing finance, and the role of the government in the housing market. Prerequisite: Economics 11, Economics 113.

Mr. Weinrobe

Offered every other year

255 PERSONAL INCOME DISTRIBUTION: THEORIES AND POLICIES

This course will survey theories of income distribution and inequality in the U.S. The course will also discuss policy issues dealing with income redistribution. Prerequisite: Economics 11.

Ms. Ott

Offered every other year

260 INTRODUCTION TO MATHEMATICAL STATISTICS

This is an introduction to the theory of statistics from the managerial point of view. Economics 271 should be taken concurrently.

Mr. Shakow

Offered every year

265 BASIC ECONOMETRIC THEORY

This course is an introduction to econometric methods, statistical inferences and testing hypotheses, model-building technique and theoretical justification of the model, and the estimation method used. Various estimation methods will be presented and evaluated in terms of their performance and validity in economic empirical studies.

Mr. Shakow, Mr. Puffer

Offered every year

271 INTRODUCTION TO MATHEMATICAL ECONOMICS

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: permission of instructor. Offered for variable credit.

Mr. Veendorp

Offered every year

277 REGIONAL ECONOMICS

This course examines theoretical and practical aspects of economic development, cyclical changes and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment, and inequalities in income distribution are considered. Interregional input-output tables are emphasized. Prerequisite: Economics 11.

Mr. Puffer

Offered every other year

280 JUNIOR HONORS

Designed to assist honors candidates in integration of the field. Offered as a full course.

Staff

Offered every year

281 SENIOR HONORS

Offered for variable credit.

Staff

Offered every year

282 HONORS

Eligible students selected by the department may work off campus for a summer and a semester as junior professional economists in business, government, or industry and receive academic credit. Offered for variable credit.

Staff

Offered every year

299.9 INTERNSHIP

Students spend a semester working full- or part-time outside the University as part of their academic experience. To qualify, the internship experience must significantly involve an extension, embodiment, or illustration of previous or concurrent systematic academic work in Economics. Offered for variable credit.

Staff

Offered every year

301.1 MICROECONOMICS

Mr. Veendorp

Offered every year

301.2 MICROECONOMICS

Ms. Ott

Offered every year

302.1 MACROECONOMICS

Ms. Ott

Offered every year

302.2 MACROECONOMICS

Staff

Offered every year

313 SEMINAR IN MONETARY ECONOMICS

Mr. Weinrobe

Offered every other year

325 PUBLIC FINANCE SEMINAR

Ms. Ott

Offered every other year

326 INDUSTRIAL ORGANIZATION SEMINAR

Mr. Veendorp

Offered every other year

327 INTERNATIONAL TRADE SEMINAR

Mr. Hsu, Mr. Baker

Offered every other year

328 ECONOMIC DEVELOPMENT

Mr. Hsu, Mr. Puffer

Offered every other year

377 REGIONAL ECONOMICS SEMINAR

Mr. Puffer

Offered every other year

Education

DEPARTMENT FACULTY

Helen J. Kenney, Ed.D., Professor of Education, Department Chair

David S. Zern, Ph.D., Associate Professor of Education, Adjunct in Psychology

Douglas H. Fuchs, Ph.D., Assistant Professor of Education

William C. Kvaraceus, Ed.D., Professor of Education (Affiliate)

Gaston Schaber, Ph.D., Director, Pedagogique Institut, Luxembourg, Professor of Comparative Education (Affiliate)

With the cooperation of:

Roger C. Van Tassel, Ph.D., of the Department of Economics

James Macris, Ph.D., of the Department of English and Linguistics and Language Learning

Walter Schatzberg, Ph.D., and Gale Nigrosh, M.A.T., of the Department of Foreign Languages and Literatures

Duane S. Knos, Ph.D., of the Graduate School of Geography

William A. Koelsch, Ph.D., of the Departments of Geography and History

Mark S. Plovnick, Ph.D., of the Department of Management

Patrick G. Derr, Ph.D., and Gary E. Overvold, Ph.D., of the Department of Philosophy

Roger Bibace, Ph.D., of the Department of Psychology

Edward E. Sampson, Ph.D., of the Department of Sociology

Anthony W. Hodgkinson, and Donald W. Krueger, M.F.A., of the Department of Visual and Performing Arts

Affiliate Staff: Doctoral Program

Edward F. Reidy Jr., Ph.D.

David E. St. John, Ed.D.

W. George Scarlett, Ph.D.

Clinical Instructors in Education:

Renee L. Goldberg, M.Ed.

Hessa Miller, M.A.

Kenner Myers, M.S.

Nathaniel C. Seale, M.Ed.

Jane V. Sigalis, M.Ed.

Evans Tsoules, Ed.D.

Clinical Instructors in Education (Affiliate):

Roland E. Charpentier, M.Ed.

Thomas P. Friend, M.Ed.

David Kneeland, M.A.

Barbara A. Masley, M.Ed.

Elinor M. McKeon, M.Ed.

Alexander J. Radzik, M.Ed.

UNDERGRADUATE PROGRAMS

Undergraduate education constitutes a major part of the work of the department. In conformity with its policy of emphasizing the importance of the liberal arts as a basis for educational practice, the department offers its courses and programs as electives, not as an undergraduate major. Clark students in education lay a broad foundation of scholarship in the liberal arts and in an academic major to lead into the organized education programs given at the sophomore, junior, and senior year levels.

The various undergraduate programs are designed for students interested in preparing for careers as educators in traditional and non-school, human-service oriented settings such as family life institutes, day-care settings for children and the elderly, youth organizations, courts, hospitals, correctional and rehabilitation institutions, and social service agencies.

In conjunction with various academic departments, a variety of programs serve as preparation for professional study at the graduate level and for entry into beginning teaching and specialist positions. The following programs are provided through integrated course work and field experiences:

1) *Internship Module in Elementary Education*

The elementary-level (grades 1–6) teacher education program has been approved by the Interstate Certification Compact, a legally-based certification reciprocity agreement between Massachusetts and each of thirty-one other states and the District of Columbia.

2) *Internship Module in Elementary Education and Special Education*

The special education sequence, taken as an extension of the elementary teaching module, is also approved by the Interstate Certification Compact and leads to dual certification in elementary education and special education.

3) *Internship Module in Secondary Education*

The secondary-level and special-subject teaching modules lead to certification in Massachusetts in various academic subject fields and in special subjects such as art, theater, and music.

4) *The Psychoeducational Clinician Sequence*

The psychoeducational clinician sequence consists of four courses providing intensive first-level training for students in the junior and senior years who are considering advanced graduate work in school psychology and related professional fields.

5) *The Helping Professions Sequence*

The helping professions sequence consists of four courses designed for students interested in pursuing careers and/or graduate study in education and the helping professions. Students' course work and field experiences deal with diverse groups including children, families, and the aged, in settings which may include schools, the court system, mental health agencies, and institutions. Students acquire conceptual as well as experiential skills through a balance of study and applied field work. Interaction with a variety of human service providers and systems in the Worcester area serves to integrate material from the sequence.

6) *The Elective Program*

Students may elect courses in education for general interest and background or to fill elective requirements in a departmental aca-

demographic major. The department has crosslistings with English, geography, history, linguistics, psychology, and sociology.

The internship modules and sequences are limited to students who have completed major requirements at a satisfactory level of scholarship. The decision to elect one of the organized programs must be made by sophomore year, be approved by the Department of Education, and—for secondary school and special subject teaching—must also be approved by the appropriate academic department for competency in subject matter areas.

Students interested in professional education are encouraged to consult with some member of the department early in their careers at the University to discuss overall program planning.

GRADUATE PROGRAMS

The department offers one program leading to the degree of master of arts in education, and another leading to the degree of doctor of education. Both graduate programs of study are primarily oriented toward educational programs and services required to meet the special needs of learners who are different because of their individual abilities or because of their sociocultural or economic backgrounds.

MASTER OF ARTS IN EDUCATION

This degree program is designed to extend the professional training of experienced educational practitioners. The program may be used to enrich the general theoretical background relevant to a candidate's area of educational practice and to develop new professional skills in individually-tailored program concentrations. Master's candidates concentrate their work in areas where there is depth in course offerings available through the facilities of the Department of Education and cooperating academic departments in the University. Clusters have been developed in special education, early childhood education, academic subject fields, environmental education, creative arts and education, and educational management.

Admission Requirements

In addition to the general Graduate School admission requirements, a personal interview is usually required by the Department of Education in order to determine the fit between the program resources and a candidate's goals and interests.

Degree Requirements

The course of study consists of a minimum of eight full course units with an additional requirement to be completed by one of three options: (a) an acceptable thesis, (b) the master's seminar in which an independent major paper will be prepared and presented to fellow graduate students and members of the staff, or (c) two additional full courses. The passing of a final oral examination is required of all candidates.

DOCTOR OF EDUCATION

The doctor of education degree program is an organized, part-time course of study, extending over a three year period, which enables mid-career practitioners to obtain advanced professional training without unduly disrupting their work in the field. The program is planned for

the experienced educator of proven ability who expects to assume high-level responsibility in administrative, planning, training, and evaluation roles in schools, government agencies, private organizations, or institutions of higher learning.

All doctoral students complete a core curriculum aimed at imparting a basic understanding of the analytic techniques, the social and behavioral determinants, and the management principles that will contribute to the development of new solutions to significant problems in education. The student then selects one of two program options: the learning specialist or the administrator-planner. The two are closely related. The learning specialist, as a social and psychological analyst, is concerned with what goes into the development of programs for a particular learner or group of learners; the administrator-planner is an educational analyst who has the task of program implementation.

Two year-long practica with concurrent seminars are arranged. These typically use the student's employment setting, but also could involve an alternative placement. During the first year in a Practicum Seminar guided by a senior educational specialist, the student focuses on a specific topic of educational theory or practice as a basis for an analytic paper that will lead to the development of a dissertation proposal. During the second year in the Practicum Seminar, the student formulates a dissertation proposal that includes specification of the theoretical framework, research methodology, instrumentation, and statistical analysis. By the third year, the student typically carries out the research study and completes the required dissertation report.

A small and select group of graduate students guided by a senior mentor ensures the advantages of program flexibility with much opportunity for close and continued contact between staff and students. All program designs have a significant degree of individuality, reflecting the past training and experience and the present goals of the students. The individual study plan is developed within a framework of departmental, University, and field resources.

Admission Requirements

Admission to the doctoral program requires the completion of an acceptable baccalaureate and master's degree, either at Clark or elsewhere. Students who obtain their master's degree with the department at Clark, and who wish to continue their doctoral studies in the department, must apply for continued study at the doctoral level.

A candidate must give satisfactory evidence of aptitude and capacity for graduate study as reflected in academic achievement and aptitude tests (either the Miller Analogies or the Graduate Record Examination). Professional experience, which demonstrates a high level of competence and leadership ability, also is required.

Degree Requirements

Minimal requirements for candidates at the doctoral level demand the equivalent of two years of graduate study beyond the master's level. A doctoral candidate must pass comprehensive examinations at the end of course work and complete a doctoral dissertation.

COURSES

88 DIRECTED READINGS—UNDERGRADUATE

Offered for variable credit.

Staff

Offered every semester

192 LANGUAGE IN SOCIAL CONTEXT

Also listed for credit as Linguistics 192, and Comparative Literature 192.

Ms. Nigrosh

201.1 THE CHILD AND THE EDUCATIVE PROCESS

This course deals with the behavioral and social science foundations of selected aspects of the educative process as they pertain to the elementary school-age child. Theoretical concepts and principles of learning and development will be considered in relation to: the setting of educational objectives, instructional strategies, motivation, transfer, and assessment and evaluation procedures. Required in the elementary and special education sequences leading to certification.

Mr. Zern

Offered every year

201.2 THE EXPERIENCE OF ADOLESCENCE

This course explores adolescent development through theory and research drawn from the behavioral and social sciences. Students study, discuss, and report on topics of central importance to education during the adolescent years. Special social and interpersonal problems and issues confronting today's adolescent are considered. Required in secondary level and special subject sequence leading to certification.

Ms. Goldberg

Offered every year

205.2 EDUCATION AND GEOGRAPHY INTERNSHIP SEMINAR

Refer to course description under Geography 205.2

Mr. Knos, Staff

206 AUTOBIOGRAPHY WORKSHOP

Refer to course description under Geography 206. Also listed for credit as International Development 206.

Mr. Knos

209 SIMULATION AS A LEARNING DEVICE

Refer to course description under Geography 209.

Mr. Knos

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING

A dual focus is on: (1) illustration and analysis of various cognitive and social interpersonal models of teacher and student behavior in the classroom setting, and (2) introduction to and development of skills involved in systematic observational methodologies, with the classroom as the natural setting. Students carry out a series of assigned observational tasks and execute their own individual projects.

Mr. Zern

Offered every year

223 CONTEMPORARY POLITICAL ECONOMIC PROBLEMS: FACT, VALUE AND ANALYSIS

Refer to course description under Economics 123.5.

Mr. Van Tassel

234 FIELD PROJECTS

This course provides individualized and extended experiences in a wide variety of educational and human service agencies and institutions.

Supervision is provided by the University and field agency personnel; combines related seminars and conferences, and readings as a basis for critical analysis of the experiences within the context of applied theory and practice. Offered for variable credit.

Staff

Offered every semester

234.1 FIELD EXPERIENCE: SPECIAL EDUCATION AND HUMAN SERVICES

This course provides direct, supervised experience within a wide range of educational and human service agencies. Placements are based on assessment of students' experience, goals, and academic backgrounds. Placement possibilities include schools, mental health centers, institutions, the courts, substance-abuse centers, crisis agencies, and social planning agencies. A University coordinator maintains ongoing contact with the student and placement site to insure continuity from academic to field work. A concurrent weekly seminar provides the opportunity for students to analyze their field work experience. In addition, guest speakers address topics related to practice issues. This course may be taken as a one- or two-semester experience.

Staff

Offered every semester

235 FIELD EXPERIENCE IN THE ELEMENTARY SCHOOL

This course provides an initial experience in the elementary classroom. Students will work with teacher trainers and elementary teachers to learn about classroom management, devising curriculum units, individualizing instruction, etc. Students work together in teams to develop and teach a unit for use in a specific classroom. A field supervisor helps students to move through the planned field experience. The course consists of: (1) a field component of five hours per week in a school, (2) a weekly field seminar addressing curriculum issues, and (3) a University seminar that considers legal and program issues relating to mainstreaming special needs students in the regular school setting.

Ms. Miller, Ms. Masley

Offered every semester

241 SEMINAR: HISTORY OF AMERICAN HIGHER EDUCATION

Refer to course description under History 246.

Mr. Koelsch

247 CURRICULUM AND INSTRUCTION IN THE ELEMENTARY SCHOOL I: READING AND LANGUAGE

This course deals with key elements of curriculum planning and implementation in reading and language arts for the elementary school: stating of objectives; assessment of initial learner status; selection and organization of content, materials, learning activities; instructional modes; evaluation of learning outcomes. A weekly two-hour school-based, field experience is required.

Ms. Miller

Offered every year

248 CURRICULUM AND INSTRUCTION IN THE ELEMENTARY SCHOOL II: MATHEMATICS AND SCIENCE

This course deals with key elements of curriculum planning and implementation in mathematics and science for the elementary school: stating of objectives; assessment of initial learner status; selection and organization of content, materials, learning activities; instructional

modes; evaluation of learning outcomes. A weekly two-hour school-based, field experience is required.

Ms. Sigalis

Offered every year

249 THE HELPING RELATIONSHIP

For students interested in entering the helping professions (education, human services), this course will explore the relationship between helper and client. The role and status differences between helper and client will be considered. Interpersonal skills to increase mutual understanding and reduce defensiveness and attitudinal barriers will be developed. The focus will be on learning interview techniques in an effort to identify problems and solutions. Components of the interview will be discussed and practiced: establishing a relationship, listening skills, structuring the interview, exploration, clarification, and identifying directions for action. Students will practice skills in weekly lab sessions to be arranged.

Staff

Offered every year

251 EDUCATION AND SOCIAL POLICY

This course deals with the relationship between social problems, social policy, and education. Group visits to social service agencies will be arranged to enable students to understand agency functions, client populations, and the relationship between the agency and the larger social service network. Emphasis is placed on: social problems and social solutions, linking individuals and external primary groups with societal resource systems, and impact of social policy change on individuals and institutions.

Mr. Seale

Offered every year

252 THE EARLY CHILDHOOD EDUCATOR: THEORY AND PRACTICE

For this course each student will spend eight to ten hours a week in a field placement and attend a weekly two-hour seminar. Day care centers, nursery schools, kindergartens, early intervention programs, and the like will be considered as field sites. Seminar sessions will address the nature of the developing child from infancy to age eight, the value of play, the early childhood curriculum, the role of the teacher, and the implications of family stress and pressure on the learning child.

Ms. Myers

Offered every year

259 SOCIAL PSYCHOLOGY OF IDENTITY

Refer to course description under Sociology 260.

Mr. Sampson

260 LINGUISTICS AND LANGUAGE LEARNING

Refer to course description under Linguistics 260.

Staff

265 TEACHING ENGLISH AS A SECOND LANGUAGE.

Refer to course description under Linguistics 295. Also listed for credit as English 295.

Mr. Macris

266 PSYCHOEDUCATIONAL ASSESSMENT METHODS I: BASIC LEARNING PROCESSES

This course involves intensive experience in administering and interpreting individual tests of intellectual and perceptual-motor function-

ing, with particular emphasis on the Stanford-Binet and Weschler Intelligence Scales. A central focus is on underlying theoretical constructs and the interpretation, integration, and application of educational and clinical data for individualized educational planning.

Mr. Tsoules

Offered every year

267 PSYCHOEDUCATIONAL ASSESSMENT METHODS II: ACHIEVEMENT AND RELATED PERSONAL AND SOCIAL FACTORS

This course focuses on the administration of group and individual tests to determine achievement status and related personal and sociocultural factors such as aptitude, interests, personality, social and interpersonal competencies, cognitive style, environmental setting, etc.

Mr. Tsoules

Offered every year

268 PSYCHOEDUCATIONAL PRACTICUM AND SEMINAR

This field-based course provides a two-semester placement, eight to ten hours a week, within the pupil personnel department of a public school system. Each student is placed with a school psychologist and/or a counselor who will function as an ongoing supervisor. Practicum activities include:

- performing individual psychoeducational assessments and developing intervention strategies;
- interpreting assessment findings to parents and school personnel;
- supervised counseling intervention on an individual and/or group basis;
- obtaining social and developmental history information through home visits;
- observing and participating in the development of individualized educational plans as part of the Team Evaluation process.

A concurrent, weekly seminar addresses the following:

- clinical observation and behavioral analysis;
- interviewing techniques;
- counseling intervention strategies;
- development of social history information;
- organization and operation of client service systems.

Seminar meetings also will focus on the integration of diagnostic assessment techniques into comprehensive case studies. Emphasis will be placed on exploring the effective use of assessment data, reflective of the child's total environment—home, school, and community. The two semester sequence must be taken as one full course each semester.

Mr. Seale

Offered every year

269 THE SKILLED HELPER

This course is an introductory experience designed for the development of the helping professional. Emphasis is placed on: clinical observation and behavioral analysis, interviewing techniques, counseling intervention strategies, development of the social history, and organization and operation of client service systems. Students who are not concurrently taking a field course will be placed in a human service agency for a related practicum experience.

Mr. Seale

Offered every year

272 INTERNSHIP TEACHING

This is an intensive period of observation and teaching in a secondary-level or special subject field in which the student plans to teach. In-

dividual supervision is given by a University supervisor and by a teacher in a cooperating school. Prerequisite: permission of both the academic and education departments. Offered for one and one half course credits. Academic Departments, Staff, Cooperating Teachers

272.(1-9) SEMINAR IN STUDENT TEACHING

This is a conference course running concurrently with student teaching at the secondary level and in special subject fields. The seminar aims to develop the student's problem-solving ability as it relates to the specific issues and concerns of the classroom. Offered for half credit.

272.1 Seminar in Teaching English

272.2 Seminar in Teaching Foreign Languages

272.3 Seminar in Teaching Social Studies

272.4 Seminar in Teaching Science

272.5 Seminar in Teaching Art

272.6 Seminar in Teaching Theater

272.7 Seminar in Media Studies

272.8 Seminar in Teaching Music

272.9 Seminar in Teaching Mathematics

Academic and Education Departments

Offered every year

288 INTERNSHIP MODULE IN ELEMENTARY EDUCATION

This integrated internship provides an intensive experience in elementary schools in the Worcester area. It involves a full-time, supervised practicum in an elementary school, theoretical course work, seminars, and conferences. The elementary module provides credit in the following areas:

288.1 Practicum (two full courses);

288.2 Critical Issues in Elementary Education (one-half course);

288.3 Individualized Instruction and the Integrated Curriculum (one full course);

288.4 Creative Arts and Education (one-half course).

Special workshops in health and physical education for elementary school children will be required. Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the internship module.

Ms. Kenney and Staff

Offered every semester

291 DEVELOPMENTAL DEVIATIONS: LEARNING PROBLEMS AND EDUCATIONAL INTERVENTIONS

An introduction to the field of special education. Mental retardation, learning disabilities, behavioral disorders, and other categories of exceptionality are explored conceptually and practically. Current issues such as mainstreaming, labeling, and testing also are reviewed.

Mr. Fuchs

Offered every year

292 SEMINAR AND FIELD EXPERIENCE IN SPECIAL EDUCATION

The student works under the close direction of a cooperating teacher, for 10-12 hours a week in a special educational setting (resource room, special class, special agency, etc.). A concurrent weekly University seminar considers language development, communication disorders, and rehabilitation issues.

Staff

Offered every year

294 INTERNSHIP MODULE IN SPECIAL EDUCATION

This module includes a supervised practicum in a moderate special needs setting at the elementary school level with related course work

centering on psychoeducational assessment techniques, and individualized educational planning and implementation. Emphasis will be placed on the integration and utilization of a full range of data reflecting the child's total environment—home, school, and community—in the design, use, and evaluation of an individualized education plan. Module credit is allocated as follows:

294.1 Individualized Educational Planning (one full course);

294.2 Practicum in Special Education (two full courses).

Staff

Offered every year

295 GROUP AND FAMILY PROCESSES

Refer to course description under Sociology 295.

Mr. Sampson

300 GRADUATE INTERNSHIP IN EDUCATION

Offered for variable credit.

Staff

Offered every semester

301 DIRECTED READINGS

Offered for variable credit.

Staff

Offered every semester

302 RESEARCH IN EDUCATION

Offered for variable credit.

Staff

Offered every semester

305 COGNITIVE FACTORS IN THE EDUCATIVE PROCESS

This is a selective review of major theories of cognitive functioning focusing on dynamics within the individual. Piaget, Skinner, R. White, Freud's secondary processes, and Wertheimer will be studied.

Mr. Zern

Offered every year

310 ORGANIZATIONAL BEHAVIOR

Refer to course description under Management 310.

Management Department

343 ANALYSIS OF THE RESEARCH PROCESS I AND II

The course focuses on two salient dimensions of dealing with research in the social sciences: (1) understanding the structure and intent of a research report, and (2) understanding and being able to use basic statistical techniques. The form of the course will consist of the careful analysis of existing educational research. Each source will be considered in terms of particular elements in its overall structure, including hypothesis formation, operationalization of major terms, research design, etc. In addition, particular statistics in each article will be systematically considered, so that students are led to an understanding of an ability to use major statistical techniques.

Mr. Zern

Offered every year

345 RESEARCH AND EVALUATION IN EDUCATION PROGRAMS

This course explores the multiple roles of research and evaluation in developing and improving educational programs, emphasizing the effective use and design of needs assessment, policy research, program implementation research, and impact evaluation. Members will develop a research design for their own professional setting.

Ms. Kenney

Offered every year

366 SEMINAR IN COLLEGE CURRICULUM DESIGN

Refer to course description under Geography 366.

Mr. Knos

371 THESIS RESEARCH

Individual advisement on doctoral dissertation. Students will meet with members of their Dissertation Committee for assistance with their dissertation study. Advising conferences will be scheduled as needed by the individual student with committee members. The chair of the Dissertation Committee will coordinate the advising process.

Staff Offered every semester

380 DEPARTMENTAL SEMINAR ON CONTEMPORARY EDUCATIONAL PROBLEMS AND ISSUES

This course is designed for master's degree candidates who are not writing a thesis. It requires a major paper.

Ms. Kenney, Staff Offered every year

381 THE SOCIAL CONTEXT OF EDUCATION

This course reviews and analyzes social and cultural theories that provide an understanding of the process of education. Levels of interaction under consideration will be the classroom, the school, and the community. Patterns of educating will be considered within a cross-cultural context, and tools will be provided to facilitate such analyses.

Mr. Zern Offered every other year

382 FOUNDATIONS OF SPECIAL EDUCATION

In this graduate level course, a sociological perspective on special education guides discussion of core topics like deviance, labeling, mainstreaming, punishment, and testing. The works of Binet, Galton, and Itard, as well as those of contemporary psychologists, are reviewed.

Mr. Fuchs Offered every year

383 HUMANITIES SEMINAR: LEARNING AND KNOWING

An interdisciplinary study of the variety of ways we learn and know. The focus for this will be a consideration of the various and often conflicting views of the ideal of the educated person.

Mr. Overvold Offered every year

384 PRACTICUM AND SEMINAR I

A practicum with a concurrent seminar related to the student's own professional work setting or an alternative placement intended to enable the student to explore the theoretical basis and empirical research in a selected educational problem area. Students will meet individually and in small groups with a senior educational practitioner. The results of the year's experience will be reported in a formal analytic paper. A full year course.

Ms. Kenney and Affiliate Staff Offered every semester

385 PRACTICUM AND SEMINAR II

A second year practicum with a concurrent seminar related to the student's own professional work setting or an alternative placement intended to provide an experience in designing, implementing, and reporting a project of educational significance and relevance. Students

will work individually and in small groups with a senior educational practitioner. A full year course.

Ms. Kenney and Affiliate Staff

Offered every semester

386 ASSESSMENT AND OBSERVATION IN MAINSTREAM AND SPECIAL EDUCATION SETTINGS

Medically-, behaviorally, and ecologically-oriented approaches to gathering data in educational settings will be discussed conceptually and practically. Within one or more of these alternate perspectives, basic principles of measurement (e.g., reliability, validity, test norms, item-analysis) will be reviewed.

Mr. Fuchs

Offered every year

387 SOCIAL SCIENCE SEMINAR: THE FOUNDATIONS OF INQUIRY IN THE SOCIAL SCIENCES

The goal of the course is to orient students to a set of theoretical and practical issues relating to social science inquiry. Thematically, the course will focus on three topics: (1) different models for how social science inquiry should be conducted; (2) the prescriptive relationship between the methods and the results of inquiry; (3) ethical and public policy implications of the models, methods, and results of such inquiry. Some of the more specific questions to be addressed are: What, if anything, makes social science scientific? How do the results of such inquiry inform us about human experience? Can there be value-free inquiry in social science or are such studies inherently biased? What role should the results of such inquiry play in setting public policy? What are the ethical implications of psychological testing? Is value education and value clarification a proper task for education?

Mr. Overvold, Mr. Derr

Offered every year

389 RESEARCH AND PROFESSIONAL ISSUES SEMINAR

This seminar is designed (1) to expand and integrate a student's command of conceptual and methodological approaches to educational and research evaluation and (2) to review the status and implications of significant contemporary professional issues in education. A major source of content for seminar discussion will be reports of ongoing student dissertation/faculty research and/or program efforts. This seminar meets weekly for a two-hour session.

Staff

Offered every semester

English

DEPARTMENT FACULTY

James F. Beard Jr., Ph.D., Professor of English, Department Chair

Karl O.E. Anderson, Ph.D., Professor of English, Emeritus

Charles S. Blinderman, Ph.D., Professor of English

William H. Carter Jr., Ph.D., Professor of English, Director of Graduate Studies

Serena S. Hilsinger, Ph.D., Professor of English

James Macris, Ph.D., Professor of English and Linguistics

Stanley Sultan, Ph.D., Professor of English

Virginia Mason Carr, Ph.D., Associate Professor of English

John R. Conron, Ph.D., Associate Professor of English

Jessie C. Cunningham, Ph.D., Associate Professor of English, Emeritus
James P. Elliott, Ph.D., Associate Professor of English
Leone Scanlon, Ph.D., Director, Clark Writing Center
Roberta Tovey, B.A., Instructor of English
Affiliated Staff
Arthur F. Kinney, Ph.D., Professor of English, University of Massachusetts

UNDERGRADUATE PROGRAM

The English Department's program is designed to meet the needs and interests of majors and non-majors. It aims to assist all students in developing skills in close reading, critical thinking, and effective writing, as well as in acquiring knowledge and experience valuable in any vocation. Instructors offer a spectrum of approaches to literary study ranging from linguistic and textual analysis to interpretations that complement other disciplines, such as philosophy, psychology, science, management, comparative literature, and history.

The program encourages the development of a sense of cultural history, a sensitivity to literary values, and a first-hand knowledge of important authors, works, and periods of British and American literature. The prospective English major chooses at first among elective courses, gradually focusing on the study of some particular period, theme, or activity appropriate to his or her interests or goals. Introduction to Literature (Eng 10), an elective, is particularly recommended for freshmen because it combines training in close reading with critical thinking and writing. Expository Writing (Eng 18), also an elective, is especially valuable for students wishing to improve their composition. During the freshman year, the prospective English major may also wish to take a two-semester survey of major British or American writers (Eng 100 or 101), a prerequisite to the major.

In the sophomore year, majors normally enroll in courses that present an overview of the historical development of genres: poetry (Eng 13 or Eng 105) and either fiction (Eng 154) or drama (Eng 155). Also during this year, the major selects—in consultation with an adviser and other appropriate members of the staff—a suitable area of concentration. The “concentration” is an integrated structure of recommended courses inside and outside the English Department, permitting students to choose from a wide variety of courses related to the particular periods, themes, or activities appropriate to their special interests or goals. A major concentrating in Literary Criticism and Aesthetics, for example, might achieve this integration by taking relevant courses in comparative literature, linguistics, philosophy, intellectual history, psychology, and practical criticism in arts other than literature. Other suggested areas of concentration are: literature of the Renaissance, American literature, American studies, literature and the teaching of English, linguistics, literature and business, literature and science, literature and the performing arts, twentieth-century literature, women's studies, and writing (including journalism). Students wishing a double major may make the second major the basis for their concentration, or they may—with the approval of their adviser and the department—evolve their own concentrations in student-designed majors. Since the value of the concentration will depend, to a considerable extent, on the confluence of studies from a variety of disciplines, the importance of regular consultation with advisers in the selection of courses cannot be overstressed.

The basic program for all English majors may be summarized as

follows. It should be noted that some courses fulfill more than one requirement and that some courses, by arrangement through the Worcester Consortium colleges, may be taken at Assumption College and the College of the Holy Cross.

SUMMARY PROGRAM FOR ENGLISH MAJORS

Nonrequired Preparatory Courses:

Eng 10, Introduction to Literature

Eng 18, Expository Writing

General Requirements:

A. One full year Survey Course from the following:

Eng 100a and b, Major British Writers

Eng 101a and b, Major American Writers

B. Two Genre Courses:

1. Eng 13, English Poetry (full course, Semesters 1 or 2; recommended during freshman year), or Eng 105, American Poetry

2. Either Eng 154a and b, English Fiction, or Eng 155a and b, English Drama

These full year genre courses, like the surveys above, are developed chronologically to help consolidate the student's sense of period and of historical development.

C. Area Requirements:

To help majors develop greater historical perspective and awareness of the range and variety of English and American literature, all majors must take at least:

1. Two full courses or seminars dealing with English literature written before 1700. (One of these courses may be 100a, Major British Writers; Eng 155a, English Drama; or Eng 112, Introduction to Shakespeare.) The 200-level courses fulfilling this requirement include Eng 203, Medieval Literature; 206, Chaucer; 212a and b, Shakespeare; 215, Special Studies in Renaissance Drama; 216, Literature of the Renaissance; 220, Seventeenth Century; 222, Milton and the Restoration Drama.

2. Two full courses or seminars dealing with English or American literature written between 1700 and 1900. (One of these courses may be 100-level, i.e., Eng 100b, Major British Writers; 115, Fiction by Women Writers; 101a or 101b, Major American Writers; 154a or 154b, English Fiction; or 155b, English Drama.) The 200-level courses fulfilling this requirement include: Eng 226, Studies in Eighteenth-Century Literature; 228, Jane Austen; 236, British Romantic Literature; 238, William Blake; 239, American Literary Renaissance; 240, American Culture and Society, 1820–1860; 242a and 242b, Radical Voices in Nineteenth-Century Literature [Victorian]; 244, Romantic and Victorian Gothic; 245, Darwinism; 249, Twain, Howells and James; 254, Naturalism in American Fiction; 279, The American Landscape.

D. Every major's program must include at least four full semester courses at the 200-level in English. In addition, usually during the senior year, the major is required to choose one of five seminars designed to suggest or demonstrate different means of achieving critical synthesis (Eng 239, American Literary Renaissance; Eng 297, Varieties of Literary Criticism; Eng 298, The Mythopoetic Mode; Comp. Lit. 215, Marxism and Art; or Comparative Literature 251, Seminar in Literary Criticism).

HONORS PROGRAM

A student who wishes to take honors in English should choose a topic and an adviser and apply to the department chair before the end of junior year. At the student's discretion and with the adviser's approval, a student may register for an Honors Project, which will carry one or two credits. If the project warrants two courses, credit for one semester's Directed Reading and one semester's Directed Writing can be arranged simultaneously or in sequence. The adviser and the student will agree on deadlines for the project's stages, but the department requires a first draft by the first Monday in April. A complete thesis is due one week before the last day of classes. A second reader, chosen by the student and the adviser, will participate in the final evaluation. In no case will honors be granted to any student who fails to meet *both* deadlines (although the project still qualifies for course credit and grade).

INTERNSHIP OPPORTUNITIES

In cooperation with the University's Internship Office, the English Department administers a program of internships for juniors and seniors. Internships are available both in University offices and in the city—in newspapers, news departments of radio and television stations, periodical and book publishers, and communications departments. Internships can in most cases be integrated into the student's chosen concentration.

GRADUATE PROGRAM

The University offers a program leading to the master of arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with stipends ranging up to \$4,100, plus the remission of tuition.

For the master of arts, the student must satisfactorily complete at least eight full upper-level courses or seminars, including English 300, Introduction to Graduate Study; and English 349, Thesis Workshop. In addition to completion of the master's thesis, English 350, the student must pass a final oral examination.

Some teaching experience at Clark, or such other teaching as the department may regard as equivalent, is prerequisite to the master's degree.

COURSES

10 INTRODUCTION TO LITERATURE

This course provides the student with an opportunity for intensive reading and writing about basic elements of poetry, fiction, and drama to include the use of diction, imagery, point of view, tone, and structure. Small sections and limited reading lists will help establish an atmosphere conducive to significant class discussion; emphasis will also be placed on writing effectively about literature. Strongly recommended for English majors. No student may take more than one section of English 10.

Staff

Offered every year

13 ENGLISH POETRY

This course, required for the English major, focuses upon the development of the most important forms, themes, and movements of Eng-

lish poetry. It emphasizes intensive study and discussion of individual poems. A series of essays on assigned topics is required.

Mr. Sultan, Ms. Hilsinger, Mr. Carter

Offered every year

14 LITERATURE AND SCREEN STUDIES

The assumption of this course is that the definition of literature can encompass both written and filmic modes. Thus analogous forms of both modes—such as novel, epic, ballad, and poem—will be examined in parallel to determine similarities and differences in their structures. Prerequisite: Verbal skills course or permission of instructor. Also listed for credit as Screen Studies 241.

Staff, Mr. Elliott

Offered every year

16 CREATIVE WRITING: FICTION

A course designed to cultivate and guide student work, particularly in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Not open to freshmen. Prerequisite: one semester of literature taught in any department. Graded only on a credit/no record basis.

Staff

Not offered on a regular basis

17 CREATIVE WRITING: POETRY

Open to students who have taken English 16 and to students mainly interested in writing verse. Prerequisite: same as English 16. Not open to freshmen. Like most of our other writing courses, English 17 is graded only on a credit/no record basis.

Staff

Not offered on a regular basis

18 EXPOSITORY WRITING

For this course we will define writing as thinking through language—a way of discovering and exploring thought and a way of communicating it to an audience. Centered on student writing, the course seeks to enable students to enact this process of exploring and learning as well as to prepare written products, including a short investigative paper, appropriate to a range of rhetorical situations. Most classes will be conducted as workshops on student writing to help students become better at criticizing their own and others' writing. Three or four conferences with the instructor will be required and a small fee will be charged to cover the cost of duplicating the students' writing.

Staff

Offered every semester

19 INTERMEDIATE COMPOSITION

This course is designed to help those who already have acquired competence in expository writing to improve their style and rhetorical effectiveness through extensive practice in personal and professional writing. Among the methods used may be keeping a journal, reading one's writing aloud, and studying the work of established essayists. The students' own writing will be closely read both by the instructor and by other students. Informal classes will require active participation. Credit/No Record. Permission of the instructor required.

Ms. Scanlon

Offered every year

25 WRITING FOR MAGAZINES

The course is designed to help students develop appropriate styles for submission of expository articles (sometimes, of stories) to magazines

and newspapers. Some energy will be devoted to studying the history and nature of the English language, but emphasis will be placed upon analysis of contemporary periodicals and of student papers. Prerequisite: permission of the instructor.

Mr. Blinderman

Offered in 1984

77 INTERNSHIP

Offered for variable credit.

Staff

88 DIRECTED READINGS

Offered for variable credit.

Staff

90 SPECIAL PROJECTS

Offered for variable credit.

Staff

Note: When asking an instructor to sponsor Directed Readings (88) or a Special Project (90), the student (1) must be able to satisfy the instructor at the time of registration that he/she is competent to deal with the agreed upon materials primarily as works of literature and (2) must present a well thought-out proposal. The student must have taken the initiative in conceptualizing the principles on which she/he will select readings or carry out a special project, and he/she must have demonstrated competence in determining specific selections and procedures.

100 MAJOR BRITISH WRITERS

This course is designed to give the beginning student a sense of the historical development of English literature; consequently, each author will be studied both as a representative of his/her own time and as part of a continuing tradition. First semester: *Beowulf*; selections from Chaucer (in translation); *Sir Gawain and the Green Knight*; Spenser's *Faerie Queene*, Book I; selections from Shakespeare, Donne, and Milton. Second semester: Bronte's *Wuthering Heights* and Conrad's *Lord Jim*, Pope's *Rape of the Lock*, selections from Blake, Wordsworth, and Browning. Prerequisite: Verbal skills course or permission of instructor.

Ms. Carr, Mr. Sultan

Offered every year

101 MAJOR AMERICAN WRITERS

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors to be read during the first semester [101a] include: Taylor, Edwards, Franklin, Cooper, Emerson, Thoreau, Poe, Hawthorne, and Melville; during the second semester [101b]: Whitman, Twain, Howells, Dickinson, Jewett, Crane, James, Frost, Eliot, Faulkner, and Hemingway. Prerequisite: permission of the instructors.

Mr. Conron (Semester 1)

Both 101a and 101b

Mr. Beard (Semester 2)

are offered every year

105 AMERICAN POETRY

A study of selected American poets in light of a common theme or poetic form, this course is designed to introduce students to the close reading of poetry and to the question of its relation to American culture. In 1982, the theme will be "The Poet in a Landscape: American Versions

of Pastoral Poetry," and the poets to be studied will include Ralph Waldo Emerson, Emily Dickinson, Robert Frost, William Carlos Williams, Maxine Kumin, and Donald Hall.

Mr. Conron

Offered every year

110 INTRODUCTION TO HISTORY AND AMERICAN STUDIES

This is an introduction to the basic problems of interdisciplinary study and historical method as revealed in American issues and writings. The nature of literary, historical, and sociological explanation of individual and group behavior will be examined in the context of the disciplines of history and literature. Autobiography, biography, family history, narrative, fiction, and historiographical writings will be read and discussed. Previously listed as 130. Also listed for credit as History 110.

Mr. Ford, Mr. Formisano

Offered every year

112 INTRODUCTION TO SHAKESPEARE

Designed for any student who wants an introduction to Shakespeare, this course will study several major plays in detail, stressing interaction of plot and character while relating each play to common human situations and moral dilemmas. Particular attention will be paid to *values*, what they are, and how the characters deal with them. Plays to be read include *The Merchant of Venice*, *Measure for Measure*, *Julius Caesar*, *Hamlet*, and *The Tempest*. Prerequisite: Verbal skills course or permission of the instructor.

Ms. Carr

Offered every year

115 FICTION BY WOMEN WRITERS

Authors read will include Behn, Burney, Austen, Shelley, the Brontës, Eliot, Gilman, Chopin. The emphasis in this course will be upon these women authors' and their characters' reactions to, and interactions with, the historical atmospheres and landscapes of their respective ages. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger

Offered every year

116 MODERN FICTION BY WOMEN WRITERS

The selection of authors and works is based on three major concerns: that the literature read represent a chronological span, that it preserve a certain thematic coherence, and that it allow ample opportunity for discussion of aesthetic matters. The course is concerned with works written in the twentieth century that provide portraits of women in all stages and conditions of life rendered in a broad spectrum of fictional techniques. Authors studied include Gertrude Stein, Djuna Barnes, Katherine Mansfield, Virginia Woolf, Katherine Ann Porter, and Doris Lessing. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger

Offered every year

125 THE SHORT STORY

This course involves the intensive reading of a wide range of stories that exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the broadly human values implicit in the short story. Limited to 25 students. Prerequisite: Verbal skills course or permission of instructor.

Mr. Carter

Offered every year

129 MODERN DRAMA

This course is a survey of Western drama and theater from Ibsen to the present. The first semester traces the development of modern realistic drama and early experimental reactions to realism. The second semester covers the period from World War II to the present and examines several of the major postwar movements and the radical dramatic forms they have produced. Also listed for credit as Theater Arts 154.

Mr. Schroeder

Offered every other year

139 LITERATURE AND SCIENCE

The course will trace the impact of scientific discovery upon literature and the literary accomplishments of scientists. It is thus a study both in the history of ideas and in literary style. Student research will be encouraged. Prerequisite: Verbal skills course or permission of instructor.

Mr. Blinderman

Offered in 1983

141 ETYMOLOGY

The course will study the history of the English language through additions to and deletions from its native vocabulary. The approach will be chronological: from Indo-European source through Anglo-Saxon and Middle English to Modern English. Some topics: semantic change, dialects, metalinguistics, language in literature.

Mr. Blinderman Offered in 1982-83. Not offered on a regular basis

143 MODERN BRITISH FICTION

This course deals primarily with the work of five twentieth-century British writers of fiction: Joyce, Lawrence, Woolf, Forster, and Lessing. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger

Not offered on a regular basis

144 MODERN AMERICAN FICTION

A critical introduction to the best American fiction from about 1900 to 1960, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read will include Dreiser, Anderson, Fitzgerald, Hemingway, Capote, Faulkner, Ellison, Mailer, and others.

Mr. Beard

Offered every year

146 LITERATURE OF OUR TIME

A survey of contemporary literature written between 1960 and the present. Major themes will be illustrated in works by such writers as Barth, Mailer, Stone, Vonnegut, Brautigan, Atwood, Coover, Pynchon, and Nabokov. Since many of these writers use innovative techniques, an acquaintance with conventional literary devices will be needed. Prerequisite: Verbal skills course or permission of instructor.

Mr. Elliott

Offered every year

148 BUSINESS IN AMERICAN LITERATURE

This course examines the ways business and businessmen are treated in American fiction, poetry, and drama. It also provides a survey of "the American Dream," a concept closely related to American artists' attitudes toward business, by exploring such works as Franklin's *Autobiography* and short novels by Horatio Alger. More nineteenth- and twentieth-century works complete the reading. No prerequisite.

Mr. Elliott

Offered every year

154 ENGLISH FICTION

An exploration of British narrative and fictive modes from the eighteenth century to the twentieth. In the first semester, texts will include, among others, *Roxana*, *Tom Jones*, *Tristram Shandy*, and *Pride and Prejudice*. Writers considered in the second semester will include, among others, Brontë, Dickens, Lewis Carroll, and Hardy. Close attention will be paid both to texts and their intellectual contents. Prerequisite for 154a: Verbal skills course; for 154b: 154a or permission of the instructor.

Ms. Tovey

Offered every year

155 ENGLISH DRAMA

This is a course in the major periods of the English drama and theater before the twentieth century. The first semester covers the medieval theater, and the drama of Tudor, Jacobean, and Caroline England. The second semester covers the period from 1660 to the twentieth century. No prerequisite. Also listed for credit as Theater Arts 155.

Mr. Schroeder

Offered every other year

161 ADVANCED CREATIVE WRITING

Admission by permission of instructor, who will require a sample of the student's work. Enrollment limited to 10. Like most of our other writing courses, English 161 is graded on a credit/no record basis.

Staff

Not offered on a regular basis

172 EUROPEAN ROOTS OF AMERICAN SPACE: THE CROSS-ATLANTIC EXPERIENCE

This is an examination of the European images of the known world at the time of the discovery of America, and of how these early notions affected later thought about America in the areas of the arts, geography, and philosophy. With the use of literature, film, and other artistic forms, specific models are to be studied in a variety of contexts: the island, the city, the garden, the frontier, the general contrast between primitive and civilized spaces. The course is also listed for credit as Geography 172. Enrollment is limited to 15 students.

Mr. Conron

Offered every other year

183 THE LANGUAGE OF BIOLOGY

The course will study Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and anatomy. Crosslisted with Biology 183.

Mr. Blinderman

Offered Spring 1983

203 SEMINAR: MEDIEVAL LITERATURE

A study of the literature of the Middle Ages, with special emphasis upon the literature of England. Readings will include *The Song of Roland*, *The Romance of the Rose*, *Dante's Inferno*, *Sir Gawain and the Green Knight*, the *Pearl*, selected lyrics and plays, Malory's *Morte D'Arthur*, as well as selections from the *Canterbury Tales*. Prerequisite: permission of the instructor.

Ms. Carr

Offered every other year

206 SEMINAR: CHAUCER

A study of *Troilus and Criseide* and the best of the *Canterbury Tales*, followed by a more rapid reading of Chaucer's earlier works, *The Book*

of the Duchess, *The House of Fame*, *The Parliament of Fowls*, and *The Legend of Good Women*. Prerequisite: permission of the instructor.

Ms. Carr

Offered every other year

212 SEMINAR: SHAKESPEARE

Approximately 20 plays are read through the year in a close examination of Shakespeare's development as a dramatist. The course will also introduce students to recent developments in Shakespearean criticism and research techniques. Semester 1 will cover Shakespeare's early plays, the histories and the mature comedies, ending with *Hamlet*. Semester 2 will emphasize the later tragedies and the romances. Open only to junior-senior English majors and students who have successfully completed English 112.

Ms. Carr

Offered every semester

216 THE RENAISSANCE IN ENGLAND

From Thomas More's book on nowhere-at-all (called *Utopia*) to Shakespeare's witches who argue, in *Macbeth*, that "Fair is foul and foul is fair," to the metaphysical poetry of John Donne, this course will examine equivocation as the mode of thought and response in the sixteenth century, a century torn by the Protestant discoveries of Copernicus, the economic rise of capitalism, the wars with Spain (and the Spanish Armada), and the quiet political revolution—from monarchy to government by Parliament.

Mr. Kinney

Not offered on a regular basis

220 SEMINAR: SEVENTEENTH CENTURY

A study of selected Metaphysical, Cavalier, and early Neoclassical poets (including John Donne, George Herbert, Henry Vaughan, Richard Crashaw, Ben Jonson, Robert Herrick, Andrew Marvell, John Wilmot, Earl of Rochester, and John Dryden), and of major writers of seventeenth-century prose (including Sir Francis Bacon, Thomas Hobbes, Izaak Walton, Robert Burton, Sir Thomas Browne, John Evelyn, Samuel Pepys, John Locke, and John Dryden). Prerequisite: permission of instructor.

Mr. Carter

Offered every other year

222 SEMINAR: MILTON AND THE RESTORATION DRAMA

This is an intensive reading of Milton's poems and selected Restoration plays by Wycherley, Etherege, Dryden, Congreve, and others. Prerequisite: permission of instructor.

Mr. Carter

Offered every other year

226 SEMINAR: STUDIES IN EIGHTEENTH-CENTURY LITERATURE

The first seven weeks of this course will focus primarily on the Augustans—the poetry of Pope; Swift's poems, essays, and *Gulliver's Travels*; and Gay's *Beggars' Opera*. As these authors tend to be intensely topical and satirical, substantial effort will be made to relate them and their writings to the literature, life, and thought of the times. The rest of the term will deal with the Age of Johnson. Although our primary emphasis will be on James Boswell and Samuel Johnson, we will also deal with a number of eighteenth-century poets (to be selected from the following: James Thomson, William Collins, Thomas Gray, Christopher Smart, Oliver Goldsmith, Thomas Chatterton, William Cowper, and George Crabbe) and with at least two eighteenth-century drama-

tists—Goldsmith and Sheridan. The course will be flexibly designed to permit students to investigate other contemporary figures in related arts or disciplines (e.g., Bernard Mandeville, David Hume, Edward Gibbon, Sir Joshua Reynolds, and Edmund Burke). Prerequisite: permission of instructor.

Mr. Carter

Offered every other year

228 SEMINAR: JANE AUSTEN

A close study of Jane Austen in the context of the literary and social concerns of the late eighteenth and early nineteenth centuries. The bulk of the reading will be in Austen: texts include all of the mature novels, as well as the unfinished works and selections from the *Juvenilia*. The course will also address writers whose works inform and influence Austen: Burney, Radcliffe, Johnson, and Cowper. Prerequisite: permission of the instructor.

Ms. Tovey

Not offered on a regular basis

236 BRITISH ROMANTIC LITERATURE

The course will examine its subject from different perspectives—philosophical, biographical, and critical. To uncover what the Romantic sensibility is—how it relates to nature, love, revolution—we will study selected works of the major Romantic authors: Burns, Blake, Wordsworth, Coleridge, Shelley, and especially Keats and Byron.

Mr. Blinderman

Offered every other year

238 SEMINAR: WILLIAM BLAKE

This is an introduction to the poems and a selection of the prophetic books of Blake, including some consideration of Blake as a graphic artist. Prerequisite: permission of instructor.

Mr. Carter

Not offered on a regular basis

239 SEMINAR: AMERICAN LITERARY RENAISSANCE

Characteristic writings by Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman are examined and juxtaposed dialectically to explore the uniqueness of their individual and collective accomplishments and their larger implications in the context of American culture. Field trip to Concord and possibly elsewhere. Prerequisite: permission of instructor.

Mr. Beard

Offered every year

240 AMERICAN CULTURE AND SOCIETY, 1820–1860

This is an interdisciplinary study of the emergence of America as a nation and as a culture. The course will concentrate on the conflict between the ideals of individualism, nature, and community and the realities of changing social conditions. Attention will be paid to some significant patterns of Jacksonian thought and politics, to cultural geography, and to the arts (literature, painting, and architecture). There will be several field trips. Enrollment limited to 25 students. Also listed for credit as History 240.

Mr. Conron, Staff

Offered every year

241 AMERICAN THOUGHT AND CULTURE SINCE 1860

This is an interdisciplinary study concentrating on the American city since 1860. Cultural patterns and themes to be studied include the interrelation of ideals of community and changing social organization

and the role of some ideas (Darwinism, the realist and modernist aesthetics) in perception of the city. The course will include perspectives of history, geography, sociology, and the arts (primarily literature, painting, film, and photography). Enrollment limited to 25 students. Also listed for credit as History 241.

Mr. Conron, Staff

Offered every year

242 RADICAL VOICES IN NINETEENTH-CENTURY LITERATURE

Although popularly considered a time of conformity as well as hypocrisy, the Victorian period did in fact boast a number of radical writers who offered novel solutions to problems like those troubling us today: racial and sexual prejudice, assembly-line mechanization, political tyranny, "scientific creationism," imperialism, and alienation. The first semester of this course will study literary contributions, both sane and insane, to the design of a better world. The second semester studies the nature of the aesthetic experience: Pre-Raphaelites and Decadents.

Mr. Blinderman

Offered in 1983-84

244 SEMINAR: ROMANTIC AND VICTORIAN GOTHIC

This seminar will call forth the Gothic spirit from its residence in graveyards. We'll encounter Frankenstein's monster, Heathcliff, Dracula, transvestites and other aberrations infesting Gothic poetry and prose from the mid-eighteenth century to the present. Films and a field trip. Prerequisites: an active imagination and permission of the instructor.

Mr. Blinderman

Offered every other year

245 SEMINAR: DARWINISM

This seminar, of an interdisciplinary nature, is devoted to the study of original and research materials elucidating the scientific, philosophical, religious, and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Prerequisite: permission of instructor.

Mr. Blinderman

Offered every other year

248 STUDIES IN NARRATIVE FORM: CLUSTER COURSE

An exploration of narrative both structurally and historically with an emphasis on literary fiction as a particular kind of narrative form. We will follow the evolution of narrative in Western literature through the aesthetics of realism and modernism as they have been elaborated in fiction and in critical theory. The relevance of nonliterary narrative to the understanding of fiction will also be discussed. Texts will include both novels and films. Offered Spring 1983.

Mr. Conron, Mr. D'Lugo

Offered every year

249 SEMINAR: TWAIN, HOWELLS, AND JAMES

This course will explore the artistic assumptions underlying American realism through selected works of America's three best-known realists. We will also pay some attention to the development of each writer by reading samples of his early, middle, and later work. Prerequisite: permission of instructor.

Mr. Elliott

Offered every other year

254 SEMINAR: NATURALISM IN AMERICAN FICTION

This course will explore the artistic assumptions underlying American naturalism (1890-present). We will examine the themes and techniques

used by such writers as Crane, Norris, London, Dreiser, Steinbeck, and Capote. Prerequisite: permission of instructor.

Mr. Elliott

Offered every other year

257 SEMINAR: THE IRISH LITERARY MOVEMENT

This is a course in the inception, development, and effect of the literary movement during the end of the last century and the first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge, and O'Casey. The cultural, historical, and political backgrounds of Anglo-Irish literature are also studied. Prerequisite: permission of instructor.

Mr. Sultan

Offered 1982-83. Not offered on a regular basis

258 SEMINAR: LAWRENCE AND JOYCE

An intensive introduction to the art of the two writers. Poems, short stories, and novels by both will be studied. Prerequisite: permission of instructor.

Mr. Sultan

Offered 1982-83. Not offered on a regular basis

259 MODERNIST POETRY

This is a survey, with special attention to the genesis and development of modernism, and to tendencies toward a new movement in English poetry. The works of almost 50 poets, ranging in time from Emily Dickinson to Robert Creeley, are considered. Prerequisite: permission of instructor.

Mr. Sultan

Offered every other year

261 SEMINAR: W. B. YEATS

An intensive study of the accomplishment of Yeats. The principal concern will be his poetry, but attention will be given to his thought, his dramatic and other writings, and his cultural role in Ireland and the world during his time. Prerequisite, one of the following: English Poetry, The Irish Literary Movement, T. S. Eliot; also, permission of instructor.

Mr. Sultan

Offered in 1983-84. Not offered on a regular basis

264 SEMINAR: T. S. ELIOT

This is an intensive study of the major poems, plays, and critical essays of T. S. Eliot. Prerequisite: permission of instructor.

Ms. Hilsinger

Offered in 1982-83. Not offered on a regular basis

266 SEMINAR: VIRGINIA WOOLF

This is an intensive study of Woolf's nine novels, her short stories, her major essays, and her diary. The course will emphasize the artistic process as well as the vision of Woolf's work, and it will consider such collateral issues as Woolf's critical stance and her feminism. Prerequisite: permission of instructor.

Ms. Hilsinger

Not offered on a regular basis

267 SEMINAR: SPECIAL STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE: HEMINGWAY AND FAULKNER

This is a seminar devoted to the intensive study of a twentieth-century writer or small group of writers. Prerequisite: permission of instructor.

Mr. Beard

Offered every other year

268 SEMINAR: EUGENE O'NEILL

This is an intensive study of about 20 of O'Neill's plays, from the early one-acters to *The Iceman Cometh*, *Long Day's Journey into Night*, and *A Moon for the Misbegotten*, with some attention to ideas, persons, and theatrical movements affecting O'Neill. Prerequisite: permission of instructor.

Mr. Beard

Not offered on a regular basis

273 SEMINAR: F. SCOTT FITZGERALD AND THE TWENTIES

American literature experienced a rebirth in the 1920s. Using F. Scott Fitzgerald's writings as convenient points of reference, the seminar will examine, with particular attention to experiments in expression, works by such writers as Gertrude Stein, E. E. Cummings, T. S. Eliot, Sherwood Anderson, Ernest Hemingway, Sinclair Lewis, William Faulkner, Eugene O'Neill, William Carlos Williams, and Wallace Stevens. Interrelationships among the arts significant in the development of new forms and modes of expression will be stressed. Prerequisite: permission of instructor.

Mr. Beard

Not offered on a regular basis

279 THE AMERICAN LANDSCAPE

This is an interdisciplinary course on the American landscape, with emphasis on the perceptions of travelers and inhabitants as they are expressed in literature. The historical range, from the sixteenth to the twentieth century, will allow considerations of several major stages in the history of these perceptions. Readings will also be drawn from cultural geography and from art history. The course will be taught as part of a cluster including Geography 279 (Prof. Johnson) and Art 279 (Prof. Grad). Limited to 20 students. Permission of instructor required.

Mr. Conron

Offered every other year

280 THE HISTORY OF THE ENGLISH LANGUAGE

This course traces the development of English from Proto-Indo-European to present day American English. It concentrates on the main phonological, morphological, syntactic, and lexical features of the Old English, Middle English, Early Modern English, and Modern English periods. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

282 OLD ENGLISH

This is an introduction to Old English language and literature. The works read include King Alfred's preface to Pope Gregory's *Pastoral Care* and selections from the West Saxon Gospels, from the Old English translation of the Heptateuch, from Aelfric's *Colloquy*, from the Anglo-Saxon Chronicle, and from the Old English translation of Bede's *Historia Ecclesiastica Gentis Anglorum*. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

284 SEMINAR: MODERN AMERICAN ENGLISH

This seminar analyzes the grammatical structure of Modern American English. It concentrates on an evaluation system for handling spoken and written English and the application of this system to problems of current English usage. The relevance of linguistic theory and methodology of the teaching of English receives special attention. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

288 DIRECTED READINGS

Offered for variable credit.

Staff

295 TEACHING ENGLISH AS A SECOND LANGUAGE

Refer to course description under Linguistics 295. Also listed for credit as Education 265.

Mr. Macris

297 SEMINAR: VARIETIES OF LITERARY CRITICISM

Using a small number of model literary works, this course explores the theory and practice of alternative critical perspectives and schools of criticism. Prerequisite: permission of instructor.

Mr. Sultan

Offered every year

298 SEMINAR: THE MYTHOPOETIC MODE

This seminar explores the vision and epistemology of mythopoetic literature. Works read and discussed include Shakespeare's *Henriad*, Milton's *Paradise Lost*, Brontë's *Wuthering Heights*, Melville's *Moby Dick*, and a work of the modern period. Candidates for honors in English are encouraged to elect either this seminar or English 297 in their junior year. Prerequisite: permission of instructor.

Ms. Hilsinger

Offered every year

299 HONORS IN ENGLISH: SENIOR YEAR

A student who plans to take Honors in English should choose a subject and an adviser, and apply to the department chair before the end of junior year. At the student's discretion and with the adviser's approval, a student may register for an Honors Project which will carry one or two credits. If the project warrants two courses, credit for one semester's Directed Reading and one semester's Directed Writing can be arranged simultaneously or in sequence. The adviser and the student will agree on deadlines for the project's stages, but the department requires a first draft by the first Monday in March. A complete thesis is due one week before the last day of classes. A second reader, chosen by the student and the adviser, will participate in the final evaluation. In no case will honors be granted to any student who fails to meet *both* deadlines (although the project still qualifies for course credit and a grade).

Staff

300 INTRODUCTION TO GRADUATE STUDY IN ENGLISH

This course examines certain fundamental aspects of literary theory and considers the nature of and relationships among the three principal areas in the discipline—bibliography and textual analysis, literary history, and literary criticism. M.A. candidates not specifically exempted are required to take this course.

Mr. Sultan

Offered every fall semester

349 THESIS WORKSHOP

This seminar involves the doing—though not necessarily the completion—of a scholarly-critical project in literature on a professional level. The entire process from initial formulation to final presentation will be considered in the context of the specific individual projects of students in the group. A prerequisite is active commitment to and involvement in such a project. While intended primarily for graduate students in

English, undergraduates with appropriate projects—honors theses, for example—from English and allied disciplines may be accepted by permission.

Mr. Beard

Offered every year

350 MASTER'S THESIS

Prerequisite: permission of chairman or director of graduate studies.
Staff

351 READING COURSE FOR MASTER'S THESIS

Normally, only students writing theses in linguistics may take this course. Prerequisite: permission of department chair or director of graduate studies.
Staff

388 GRADUATE DIRECTED READINGS

This course may be elected to pursue in depth a topic other than that chosen for the master's thesis. Prerequisite: permission of instructor and department chair or director of graduate studies. Offered for variable credit.
Staff

COMPARATIVE LITERATURE

A student may count any of the courses listed under Comparative Literature toward the English major. In all cases, such electives must be approved by the student's adviser in the English Department as being meaningfully related to the student's overall program of English studies. The four core courses of the Comparative Literature Program—Comparative Literature 110, 230, 240, 251—are especially recommended.

THEATER ARTS

The following courses in theater arts may be taken for credit toward the English major.

10 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING

Refer to course description under Theater Arts.
Mr. Schroeder

Environmental Affairs

PARTICIPATING FACULTY

Harry E. Schwarz, B.C.E., Program Director, Professor of Environmental Affairs

Leonard Berry, Ph.D., Professor of Geography; Codirector, Program of International Development and Social Change

Roger E. Kasperson, Ph.D., Professor of Government and Geography

Robert W. Kates, Ph.D., Professor of Geography and Research Professor

John Reynolds, Ph.D., M.P.H., Professor of Microbiology

Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology

Richard B. Ford, Ph.D., Associate Professor of Comparative History;
Codirector, Program of International Development and Social Change
Christoph Hohenemser, Ph.D., Associate Professor of Physics
Alan A. Jones, Ph.D., Associate Professor of Chemistry
Laurence A. Lewis, Ph.D., Associate Professor of Geography
Frank Puffer, Ph.D., Associate Professor of Economics
Dennis W. Ducsik, Ph.D., Assistant Professor of Science, Technology
and Society, Adjunct in Geography
Kirsten Johnson, Ph.D., Assistant Professor of Geography
Paul A. Erickson, M.A., Assistant Professor of Environmental Affairs
(Affiliate)

PROGRAM

This program was developed in response to the challenge of the period of change being experienced in relations between people and their environment. New relations required new concepts and re-evaluated views of existing ones. These concepts are by now deeply implanted into the planning and implementation procedures for projects in the United States. Changes in federal or state policies may vary the degrees of environmental concerns, but consideration of these concerns are here to stay. Moreover, the countries of the Third World are beginning to include environmental concerns in their development plans. Thus, a new field of professional endeavor has evolved to deal with people and their environment.

The purpose of this program is to train students for entry-level professional positions in the expanding fields of environmental planning, management, and education. The terminal point of the program is the attainment of the degree of master of arts in environmental affairs. The baccalaureate degree is incidental to the program, serving as the proof of attainment in a traditional discipline. Within the program, concentrations are possible in environmental planning on the regional or urban level for land, water, and air, in environmental monitoring, environmental education, and development problems. The program is flexible in order to accommodate changes in the field and to remain relevant in this dynamic world.

The Environmental Affairs Program offers a student substantive knowledge in an academic discipline, a group of undergraduate courses covering the concepts and tools necessary for working on environmental problems, internships, a one-year graduate program involving advanced courses in specialized areas, seminars, and a practicum in which the student develops a terminal project or thesis. Both academic and practical experiences make up the Environmental Affairs Program of study.

A central feature of the program is the relationship between student and adviser. By limiting the number of students admitted, close student-adviser relationships are maintained. In this way, the program can be tailored to the individual student's needs through the selection of undergraduate courses, which develop a student's disciplinary training while providing a strong foundation on environmental issues.

Where listed courses at Clark do not meet a student's full needs, Consortium courses, special projects, and directed readings provide the necessary additional training. A full summer internship is recommended immediately after completion of the baccalaureate degree and before the commencement of graduate work, but the program permits the substitution of research and teaching experiences as well as intern-

ships at other periods, such as during the senior year or within the graduate-training span. In the two-year undergraduate part of the program, students are expected to take courses in their chosen discipline and environmental program-oriented courses to complete their baccalaureate requirements. Ten courses are normally required for graduate credit.

ADMISSION

Because the program is a three-year combined B.A./M.A. program, students normally are admitted at the end of their sophomore or the beginning of their junior year. A small number of graduate students are admitted to the program if their admission adds to the student body range of backgrounds not available from within. However, those entering the program with a bachelor's degree normally require at least one and one half years of study to complete the necessary course work.

In order to maintain a close student-faculty relationship, admission to the program is limited to approximately 15 students per year. Selection of persons for admission is based upon an evaluation of the applicant's previous academic record and work experience, plus an interview if required by the admissions committee. In those cases where the interview requirement would impose an extreme hardship upon the applicant, a mutually satisfactory alternative may be possible.

Students applying for admission at the junior level are expected to have a cumulative average of about B – or higher and to have satisfactorily completed at least four courses in the sciences of which at least one each should be in biology and the physical and social sciences. Individual exceptions are possible if competence can be demonstrated in an alternative way. Seniors may be accepted on an individual basis with additional requirements based on the program objective and past experience of the student. Deficiencies may be made up by summer courses prior to entering the program or for one course only by concurrent registration in the junior year. Applicants from outside Clark University are required to submit GRE scores.

Since admission to the program is highly restricted, interested students are urged to apply as early as possible to the program director for a determination of their eligibility.

UNDERGRADUATE PROGRAM

The undergraduate portion of the Environmental Affairs Program emphasizes the acquisition of the tools and concepts students need as a base from which to develop their knowledge and skills in environmental affairs. Two options are available to students in their undergraduate years. One, the preferred, is to satisfy a departmental major and an environmental minor and so receive a bachelor of arts degree in a traditional discipline. The other is a self designed major with a concentration in environmental affairs and in a related field such as biology; chemistry; geography; government; management; psychology; sociology; or science, technology and society. The specific requirements for each of these options are:

Option 1

This leads to a bachelor of arts degree in any discipline with an environmental minor. The student must fulfill the requirements of a major in an established discipline and complete five course credits in environmental affairs, including the following:

EA201, Applications of Systems Analysis to Environmental Problems	1/2
EA202, The Biosphere	1/2
EA203, Man's Perception of His Environment	1/2
EA204, Environmental Plans and Programs	1/2
Individual course substitutions may be made with the approval of the program director. During their junior or senior year, students must take at least two courses accepted on the graduate level, if they plan to complete graduate work in one year.	

Option 2

This leads to a bachelor of arts degree with concentration in environmental affairs. This program jointly designed by the student and the adviser must be approved by the dean of the college. This program must include EA 201, 202, 203, 204 (four 1/2 courses), four other EA courses, eight course credits in one field, such as biology; chemistry; geography; government; management; psychology; sociology; or science, technology and society that provide basic skills or are related to environmental problems, and two courses in fields other than the area of concentration related to the environment. Individual course substitutions may be made with the approval of the program director. During their junior or senior year, students must take at least two courses acceptable on the graduate level if they plan to complete graduate work in one year.

GRADUATE PROGRAM

Admission: Students who have been enrolled in the program as undergraduates will continue in the graduate phase if they meet the standards of the Graduate School and pass a review of their progress by the Environmental Affairs Program Admissions Committee. A student entering the program with a bachelor's degree from outside Clark University is accepted only if the Environmental Affairs Admissions Committee determines not only that the student is capable of doing the work, but also that the student's admission will further the goals of the program. The presentation of GRE scores for such students is required.

Internship: An internship of at least two months' duration in an agency or firm in which the intern works on an environmental problem, or equivalent practical experience, is usually required. The internship normally will be accomplished during the summer following the baccalaureate. Students may be assigned to internships or can find a position by themselves if such a position is approved by the director of the program. If no internship can be secured this requirement can be waived or be replaced by a research or teaching experience.

Course Work: A course program of ten courses is required, eight courses if the student took two courses acceptable at the graduate level in the junior or senior year. This course program will be agreed upon jointly by the student and adviser and will be directed towards a specific focus, such as water or air pollution, planning, monitoring, or any other specific topic. One course credit for research or practical work on the thesis or terminal project and one for writing the thesis or project (EA 350) are a required part of the course program. Students entering the program at the graduate level may be required to take additional courses as needed to fill gaps in their undergraduate preparation.

Teaching and Research Prerequisite: Some teaching and research at Clark

is prerequisite to the M.A. degree. Every effort is made to provide on- and off-campus training activity at the teaching and research level.

Master's Project: This can be a terminal project, i.e., the solution to a specific problem or a thesis on a research topic. In either case, it must relate to the student's specific course focus, and its topic and outline must be approved by the director of the program.

Financial Aid: Several tuition remission scholarships are available for qualified applicants.

COURSES

013 FIELD STUDIES OF ENVIRONMENTAL ISSUES

Refer to course description under Geography 013. Also listed for credit as Science, Technology and Society.

Mr. Kates

101 INTRODUCTORY CASE STUDIES

Refer to course description under Science, Technology and Society 101.

Mr. Hohenemser, Mr. Schwarz, Mr. Ducsik

106 COMMUNICATING THROUGH MAPS

This course provides the student with the knowledge of basic principles of map reading, interpretation, and the use of maps for analytical purposes within an environmental context. Students acquire this basic knowledge of environmental mapping through discussions, lab experiments, observations, and field work. Also listed for credit as Geography.

Staff

Not offered on a regular basis

109 MICROBIOLOGY

Refer to course description under Biology 109.

Mr. Reynolds

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT

Refer to course description under Economics 155.

Mr. Major

201 APPLICATION OF SYSTEMS ANALYSES TO ENVIRONMENTAL PROBLEMS

Systems analyses as a tool for problem solving is the focus of this course. The fundamental concepts and their application to environmental problems will be discussed. Stress will be on the use, applicability, and limitations of this method in analyzing complex environmental systems and their physical, social, and economic aspects. Prerequisite: some knowledge of basic algebra. Offered as a half course, first half of semester. Also listed for credit as International Development 201.

Mr. Schwarz, Mr. Major

202 THE BIOSPHERE

Building on a foundation of general knowledge of physiology, genetics, taxonomy, and ecology, the course will provide a biological context and perspective for the analyses and assessment of man-made environmental hazards. Prerequisite: introductory course in biological science or concurrent registration in such course with permission of instructor.

Offered as a half course, second half of semester. Also listed for credit as International Development 202.

Mr. Erickson

203 MAN'S PERCEPTION OF HIS ENVIRONMENT

This is an introduction to the study of environmental behavior, examining man's reactions to environmental changes and natural and man-made hazards. Offered as a half course, first half of semester. Also listed for credit as International Development 203.

Staff

204 ENVIRONMENTAL PLANNING

This course will look at environmental planning from a broad and general viewpoint. The planning process and some of its major components will be examined. A case study will serve as one of the vehicles to analyze planning. Offered as a half course, second half of semester. Also listed for credit as International Development 204.

Mr. Schwarz, Mr. Major

205 READINGS IN ENVIRONMENTAL AFFAIRS

The course consists of directed readings for undergraduates in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.

Staff

206 RESEARCH IN ENVIRONMENTAL AFFAIRS

The course consists of special research projects for undergraduates in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.

Staff

210 ENVIRONMENTAL PROTECTION LAW

This is a free-wheeling discussion of pollution control in the real world, its legal, institutional, and political framework. Federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizen suits"; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy versus ecology; old tools, new tools, potential for change. The course includes reading in multilithed materials—statutes, regulations, court documents, case decisions, news accounts, and journal articles. There will be informal student advocacy panels to assure balanced presentation of issues. Also listed as Science, Technology and Society.

Staff

Offered every other year

216 ENVIRONMENTAL IMPACT ASSESSMENT

This course will deal with impact assessment under the National Environmental Policy Act of 1969 (NEPA). Focus will be on the analysis and evaluation of impacts on Federal programs and projects on inter-related physical and social components and dynamics of the human environment. Methodological as well as conceptual requisites for the interdisciplinary analysis and evaluation of impacts will be discussed. Special emphasis will be given to the management of the assessment team as a key factor in meeting the environmental goals of impact

assessment under NEPA. Relevant case studies will be selected from a wide variety of domestic and international programs and projects.

Mr. Erickson

Offered every other year

217 SOCIOENVIRONMENTAL IMPACT ANALYSES

The aim of the course is to provide an overview of the theories, methods, and models used in assessing the social repercussions of planned development. A case study approach will cover both domestic and foreign projects. These will be analyzed in terms of the available institutional planning tools such as social impact statements, as well as the critical literature on the subject. The goal is to equip the student with both analytical skills and a critical perspective necessary to evaluate the social aspects of development. The course is oriented toward majors in International Development and Environmental Affairs. Instructor's permission is required for non-majors. Also listed for credit as Geography.

Ms. Johnson

Offered every other year

221 APPLIED SURFACE WATER HYDROLOGY

The course will focus on practical applications of hydrology for water resources management. Topics explored will include rain fall/runoff relationship, hydrograph analyses, frequency studies of floods and droughts, reservoir operation, and flood routing. Both the techniques and the application to problems such as water supply and flood control will be covered. Prerequisite: Geography 014 or permission of instructor. Also listed for credit as Geography 221.

Mr. Schwarz, Staff

Offered every other year

222 SEMINAR IN RIVER BASIN PLANNING

This course will concentrate on one river basin and the studies made and plans prepared to develop this river basin. Students will work independently on specific sections of the case under consideration. Seminar sessions will give participants opportunity to present their independent work and discuss it in a broader context. Readings, discussions, and research will focus on study objectives, techniques, and results and relate them to the appropriate economic and social values. Also listed for credit as Geography 214.

Mr. Schwarz, Mr. Major

Offered every other year

226 HOW SAFE IS SAFE ENOUGH? RISK ASSESSMENT AND HAZARD MANAGEMENT

Refer to course description under Geography 226.

231 SEMINAR: POLITICS AND THE ENVIRONMENT

Refer to course description under Geography 231. Also listed for credit as Government.

Mr. Kasperson

232 SELECTED TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH

Refer to course description under Biology 232.

Mr. Reynolds

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT

Refer to course description under Geography 234. Also listed for credit as History.

Mr. Koelsch

237 MANAGING THE COASTAL ENVIRONMENT

Refer to course description under Science, Technology and Society 237.
Mr. Ducsik

238 ISSUES IN PUBLIC HEALTH

Refer to course description under Biology 238. Also listed for credit as Science, Technology and Society.
Mr. Reynolds

239 BIOLOGICAL AND HEALTH ASPECTS OF WATER POLLUTION

Refer to course description under Biology 239. Also listed for credit as Science, Technology and Society.
Mr. Reynolds

250 PRACTICAL PROBLEMS IN ENVIRONMENTAL AFFAIRS

This is a work-study course. The student will work four full (eight-hour) days in an environmental agency in the Worcester-Boston area or spend equivalent time on a project at the University. Also, weekly seminars at the University will review and evaluate work experiences. Grades will be awarded on the basis of the student's accomplishment in internship posts and seminars. Prerequisite: permission of instructor. Offered as a double course during summer session if internship posts are available.
Staff

Not offered on a regular basis

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT

Refer to course description under Geography 251.
Mr. Kasperson

256 PROBLEMS IN WATER RESOURCES PLANNING

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation, and the written and oral presentation, of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: a 200-level course in environmental assessment; physical geography; economics; or science, technology and society or permission of instructor. Also offered for credit as International Development.

Mr. Schwarz

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION

Refer to course description under Geography 257.
Mr. Major

275 CITIZEN PARTICIPATION IN PLANNING

Refer to course description under Geography 275.
Mr. Kasperson

300 READINGS IN ENVIRONMENTAL AFFAIRS

The course consists of directed readings for graduate students in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.
Staff

301 RESEARCH IN ENVIRONMENTAL AFFAIRS

This is a special research project for graduate students in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.

Staff

350 THESIS IN ENVIRONMENTAL AFFAIRS

This course consists of preparation of master's thesis or master's terminal project.

Staff

COURSES DIRECTLY CREDITABLE IN ENVIRONMENTAL AFFAIRS

BIOLOGY 110 INTRODUCTION TO BOTANY

Refer to course description under Biology.

Mr. Ahmadjian, Mr. Johansen

BIOLOGY 117 PRINCIPLES OF ECOLOGY

Refer to course description under Biology.

Staff

CHEMISTRY 142 ENVIRONMENTAL CHEMISTRY

Refer to course description under Chemistry.

Staff

CHEMISTRY 224 ENERGY AND COAL

Refer to course description under Chemistry.

Mr. Wen

GEOGRAPHY 057 CYCLES IN THE BIOSPHERE: INTRODUCTION TO ENVIRONMENTAL MANAGEMENT

Refer to course description under Geography 057.

Mr. Kates

GEOGRAPHY 181 INTRODUCTION TO CARTOGRAPHY

Refer to course description under Geography 181.

Mr. Steward

GEOGRAPHY 208 ENVIRONMENTAL COGNITION AND BEHAVIOR

Refer to course description under Geography 208.

Ms. Johnson

GEOGRAPHY 280 PLANNING ISSUES

Refer to course description under Geography.

Staff

GEOGRAPHY 281 PLANNING INTERNSHIP AND INTERNSHIP SEMINAR

Refer to course description under Geography.

Mr. Knos

GEOGRAPHY 350 NATURE, SOCIETY, AND TECHNOLOGY: THEORY OF HUMAN ENVIRONMENT

Refer to course description under Geography 350.

Mr. Kates

GEOGRAPHY 358 PROFESSIONAL SEMINAR IN RESOURCE PROJECT EVALUATION

Refer to course description under Geography.

Mr. Major

Foreign Languages and Literatures

DEPARTMENT FACULTY

Paul F. Burke Jr., Ph.D., Associate Professor of Classics, Department
Chair

Karl J. R. Arndt, Ph.D., Professor of German, Emeritus

Raymond E. Barbera, Ph.D., Professor of Romance Languages,
Emeritus

Kenneth Hughes, Ph.D., Professor of German and Russian

J. Richard Reid, Ph.D., Professor of Romance Languages, Emeritus

Walter Schatzberg, Ph.D., Professor of German

Marvin A. D'Lugo, Ph.D., Associate Professor of Spanish

Hartmut Kaiser, Ph.D., Associate Professor of German

Dorothy Kaufmann-McCall, Ph.D., Associate Professor of French

J. Fannin King, M.A., Associate Professor of Romance Languages,
Emeritus

Michael K. Spingler, Ph.D., Associate Professor of French

William Ferguson, Ph.D., Assistant Professor of Spanish

Marilyn Jiménez, Ph.D., Assistant Professor of Spanish

Barbara Geller Nathanson, Ph.D., Assistant Professor of Judaic
Studies

Tamar March, Ph.D., Visiting Associate Professor of French

Leo Ortiz-Minique, M.A., Visiting Instructor of Spanish

Gale H. Nigrosh, M.A.T., M.A., Lecturer in French and Linguistics

Catherine Q. Spingler, M.A., Lecturer in French

UNDERGRADUATE PROGRAM

The Major in Foreign Languages and Literatures

The major in foreign languages and literatures concentrates particularly on the way in which nations may express the consciousness of their culture through literature and other arts. The interdisciplinary and humanistic spirit of the program encourages the student to relate studies in literature to other areas of the humanities and social sciences such as history, philosophy, fine arts, geography, psychology, and sociology in order to arrive at an understanding of the cultural traditions of other nations.

Requirements

- 1) No fewer than eight courses beyond the intermediate level in one or more foreign languages.
- 2) A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with a faculty adviser.
- 3) If the major program is concentrated in one language, a reading knowledge of a second language is recommended.
- 4) At least one course in linguistics is recommended.

The department does not require the student to follow a rigid sequence of courses, yet the nature of language study clearly indicates a basic progression, which the typical student might follow.

Essentially, departmental offerings for the foreign language major may be organized in the following groups:

- 1) Skill-oriented courses including conversation, composition, translation (11, 12, 100s)
- 2) Cross-cultural courses and courses focusing on literature and the fine arts including films and theater (100s)
- 3) Courses in literature which concentrate on particular themes, theories, problems, critical approaches (100s, 200s)
- 4) Courses in major figures, literary history, the styles of particular historical periods, and surveys of literature (100s, 200s)

These groupings are not mutually exclusive and, in the case of group two, some courses in film and theater could be considered to share some of the goals of a conversation or composition course but on a more advanced level. Similarly, it would not be possible to address oneself to the study of a style, say that of the Baroque, without pursuing questions of critical approaches and literary theory. However, the grouping is meant to assist the student by suggesting ways of organizing his/her progress within the major, beginning with the mastering of language skills and critical methods, and then proceeding to the application of those skills and methods to particular cultural and literary areas.

The Major in Comparative Literature

The major in Comparative Literature is intended for the student inclined toward studies in the field of foreign literatures, but whose interest lies beyond the scope of any one national literature, period, or genre. The major will afford this student the opportunity of combining related trends, movements, and other literary developments into a program that reflects the broadest possible frame in which to pursue the study of literature.

Requirements

- 1) No fewer than five courses taken beyond the intermediate level in one or more foreign languages. (An intermediate level course in a second foreign language may be used in certain cases toward the fulfillment of the language course requirement.)
- 2) Suggested sequence of core courses in Comparative Literature:
 - a) Ideally, the student should have taken Problems in Comparative Literature (CMLT 110) or a similar introductory comparative literature course by the end of the sophomore year.
 - b) By the end of the junior year, the student should have completed at least two of the following genre courses: Elements of Drama (CMLT 230), Studies in Narrative Form (CMLT 240), or English Poetry (English 13). In certain cases, the sequence of courses might be altered according to the particular direction of studies determined by the student and the adviser.
 - c) While a student may wish to devote his/her senior year to a number of tutorials, autonomous projects, and related courses, those students interested in advanced study of literary theory are encouraged to take the Seminar on Literary Theory and Practice (CMLT 251).
- 3) A number of related courses varying from five to eight, depending

on the student's range of interests, are to be selected by the student in consultation with a faculty adviser.

The Advisory System

Since the department believes that individual courses will assume relevance only in the context of a total program which will have sufficient flexibility to take the student's intellectual biography into account, it emphasizes strongly the close association between student and faculty advisers. The basic role of the adviser is to work closely with the student to ensure that the program developed will enhance and reflect the student's scholarly growth.

Although all members of the department serve as faculty advisers, the following have been designated as advisers in the major areas of concentration offered by the department:

Comparative Literature—Mr. Spingler

French—Mr. Spingler

German—Mr. Schatzberg

Hebrew—Ms. Nathanson

Spanish—Mr. D'Lugo

Students are encouraged to develop a foreign languages program involving two or more languages. To discuss this possibility as well as to plan career goals and options, contact Mr. Schatzberg.

Study Abroad

For summer, semester, and year-long programs of study abroad in France, Germany, Mexico, and Italy, contact Mr. Schatzberg and the Office of International Programs.

UNDERGRADUATE-GRADUATE PROGRAM: THE B.A./M.A. PROGRAM IN COMPARATIVE LITERATURE

The B.A./M.A. Program in Comparative Literature is a course of studies integrating the last two undergraduate years with the first year of graduate work. It permits and requires careful planning and coordination of course work, independent study, and research, and the preparation of a master's thesis over a three-year period beginning with the junior year. The program, which is described in greater detail elsewhere in this catalog, is currently in its seventh year of operation. It involves faculty and students who have a demonstrated interest in literature and literary criticism. For further information concerning the program's admission standards, requirements, methodology, and goals, contact Mr. Spingler. (See listings under Comparative Literature.)

COURSES

- A. French
- B. German
- C. Hebrew
- D. Russian
- E. Spanish

A. FRENCH

French 11 ELEMENTARY FRENCH

This course is designed for two types of students: those with no background in French and those with some previous exposure to the lan-

guage who are not yet prepared to enter the intermediate course. Students work on all four language skills (listening, speaking, reading, writing) with the aim of developing an active knowledge of French. Individual work will be done in the language laboratory. Indivisible course.

Ms. Nigrosh, Ms. Spingler, Ms. March

Offered every semester

French 12 INTERMEDIATE FRENCH

This is a review of French grammar with emphasis on writing and speaking. There will be reading and discussion of provocative works in journalism, fiction, theater, and poetry to acquaint students with significant personalities and ideas in French life. Also included are group projects on cross-cultural themes in class and individual work in the language laboratory. Prerequisite: French 11 or equivalent background, to be determined by instructor. Divisible course.

Ms. Nigrosh, Ms. Spingler, Staff

Offered every semester

French 106 SPECIAL TOPICS IN FRENCH

Offered for variable credit.

Staff

Offered every semester

French 127 SPEAKING FRENCH: INTERMEDIATE LEVEL

The goal of the course is to increase the oral fluency of the student by providing conversational situations in a variety of contexts. Most topics will be taken from current events in France and other Francophone countries. Native-speaking assistants will help create a setting conducive to extended conversation. Students will have the opportunity to use video and tape recording equipment as part of a self-monitoring process in the course.

Staff

Offered every other year

French 129 SKILLS AND TECHNIQUES IN READING FRENCH

This course provides a transition from speaking to reading with ease and understanding for the student who has the fundamentals of the French language. Starting with easy contemporary French (a novel of Georges Simenon), the class progresses through a brief experience with French poetry to the somewhat more difficult French of Jean-Paul Sartre in two of his plays (*Huis clos* and *Les Mouches*). A textbook helps increase vocabulary, understanding of French syntax and idiomatic structure, and other reading skills. Close attention is given in class to the precise meaning of words, phrases, verb tenses, etc. Prerequisite: French 12, or equivalent skill in the language to be determined by consultation with professors.

Mr. King

Offered every year

French 130 READINGS IN FRENCH LITERATURE

This course is in logical sequence to French 129, but not requiring French 129 as prerequisite. There is continued close attention to vocabulary, idioms, sentence structure, and exact meaning of phrases and sentences. Increased attention is given to artistic effects and stylistic values. Readings: Simenon; Anouilh, *Antigone*; and a selection of twentieth-century works. Prerequisite: French 129, 131, or equivalent.

Mr. King

Offered every year

French 131 READINGS IN FRENCH

This course is designed for students at the third-year level who wish to enhance their skills in reading, writing, understanding, and speaking

French. Modern French texts will be chosen for their intrinsic interest and for their linguistic accessibility. There will be class discussions in French. Prerequisite: second semester of French 12, or permission of instructor.

Mr. Spingler

Offered every year

French 132 READINGS IN FRENCH LITERATURE: CONTEMPORARY TOPICS

This course, basically a continuation of French 131, introduces the student to the study of the ways literature may reflect a nation's cultural and intellectual life. The course will emphasize the literary life in France between the two world wars. The student will be given an introductory look at some of the movements that have characterized French culture in the twentieth century, such as surrealism and existentialism. The course's purpose is to provide the student with a basis for literary and cross-cultural studies to be pursued at an advanced level in subsequent courses. Readings will be selected from the works of Gide, Cocteau, Sartre, Camus, Anouilh, and others. There also will be some films chosen to complement the study of the literature. Conducted in French. Prerequisite: French 129 or higher level course, or consent of the instructor.

Mr. Spingler

Offered every year

French 137 ORAL FRENCH

The aim of this third-year course is to perfect skills in spoken communication. In this semester of a two-semester course, particular attention is given to the sounds of French and to its rhythm and melodic patterns. Conducted in French. Meets twice a week for two hours plus three half-hour periods in the language laboratory. Prerequisite: grade of B or higher in French 12, or equivalent skill in the language, to be determined by a placement test; permission of instructor.

Mr. King

Offered every year

French 138 ORAL AND WRITTEN FRENCH

The aim of this third-year level course is to perfect skills in oral and written communication. This course is intended as a sequel to French 137 but does not require French 137 as prerequisite. In this semester, increasing attention is given to grammatical patterns and written French as well as fluency in the spoken language. Conducted in French. Meets twice a week for two hours plus three half-hour periods in the language laboratory. Prerequisite: Grade of B or higher in French 12, or equivalent skill in the language, to be determined by a placement test; permission of instructor.

Mr. King

Offered every year

French 141 GENERAL VIEW OF FRENCH LITERATURE, CHARLEMAGNE TO LOUIS XIV

The course covers the period from the Middle Ages through the Age of Louis XIV. It involves an interpretation of the main currents of French literature from the *Chanson de Roland* through the period of the great classicists of the seventeenth century. Each period is studied concentrating on a limited number of authors or schools so as to best represent the characteristics of the period, social and philosophic as well as literary. Conducted in French. Prerequisite: Grade of B or higher in a third-year course.

Mr. King

Offered every other year

French 142 GENERAL VIEW OF FRENCH LITERATURE, VOLTAIRE TO PROUST

The course studies the period from the beginning of the Age of Enlightenment to the early twentieth century. It involves an interpretation of the main currents of French literature between the Age of Louis XIV and the First World War. Each period is studied concentrating on a limited number of authors or schools so as to best represent the characteristics of the period, social and philosophic as well as literary. Conducted in French. Prerequisite: Grade of B – or higher in a third-year course.

Mr. King

Offered every other year

French 157 ASPECTS AND PROBLEMS OF CONTEMPORARY FRANCE

A cross-cultural seminar concentrating on the evolution in the twentieth century of traditional French values, myths, and social institutions. Conducted in French. Prerequisite: French 131 or above, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 158 THE FRENCH-SPEAKING WORLD

An interdisciplinary analysis of the role of the French language and the culture it represents in various parts of the world, with special emphasis on Quebec, the Antilles, and French-speaking Africa. Students will be expected to give an oral report, to be developed into a written research project, on the subject of the course as it relates to their particular discipline or area of interest. Prerequisite: French 131 or above, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 160 FRENCH CULTURE SEEN THROUGH FILM: JEAN RENOIR

The course includes analysis of the cinematic language and aesthetic of Jean Renoir, with particular attention to the way in which they reflect French traditions, mental structures, and social values. Readings will include film scripts, film criticism, and source texts. Attendance at approximately 8–10 films will be required. Conducted in French. Prerequisite: French 130 or permission of instructor.

Mr. Spingler

Offered every other year

French 162 THE PASSIONATE SOCIETY: LOVE AND THE LITERARY IMAGINATION IN EIGHTEENTH CENTURY FRANCE

The Age of Reason was also an age of passion. The extraordinary emphasis on the powers of reason and rationality to govern human action which characterized the century provides the background against which the power of emotions is described and analyzed in the imaginative literature of the period. The course will study this aspect of the enlightenment in its literary expression. Occasional slide shows and musical representations will supplement the discussions of the theme. Readings will include: *Manon Lescaut* (Prévost); *Les Lettres Persanes* (Montesquieu); *La Religieuse* (Diderot); *Le Jeu de L'Amour et du Hasard* (Marivaux); *Le Sofa* (Crébillon); *Les Liaisons Dangereuses* (Laclos); *La Philosophie du Boudoir* (Sade); *La Nouvelle Héloïse* (Rousseau).

Ms. March

Offered every other year

French 165 FRENCH PLAY PRODUCTION

A workshop course involving considerable applied spoken French. The course will normally concentrate on the plays of one playwright, studying them in terms of the problems peculiar to their staging. Particular attention will be paid to acting styles. Much of the class work will be devoted to the expressive vocabulary of the actor including diction, phrasing, pitch, and rhythm as well as gesture and blocking. Because of the scene work done in class, students will have ample opportunity to work on the improvement of their spoken French. Possible playwrights to be studied: Molière, Marivaux, Ionesco, Beckett. Prerequisite: speaking knowledge of French and permission of instructor. Conducted in French.

Mr. Spingler

Offered every other year

French 170 THE MODERN FRENCH THEATER: EXPERIMENTS OF THE AVANT-GARDE

This is a study of the origins and developments of the avant-garde theater of France with particular emphasis on the staging of the plays. The course focuses on the theater since 1950 especially works by Ionesco, Beckett, Genêt, and Arrabal. The course also explores the affinities between these playwrights and the Dada and Surrealist movements and studies three precursors: Jarry, Ghelderode, and Artaud. Conducted in French.

Mr. Spingler

Offered every other year

French 175 SARTRE AND CAMUS

This is a study of major literary works by Sartre and Camus in the context of each writer's philosophical and political theories. Conducted in French. Prerequisite: French 131 or above, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 177 ESSAYS OF THE SELF

This course is a study of modes of subjectivity in the French tradition through seminal works of self-analysis and autobiography. We will explore the relationships between self-expression, self-creation, and philosophy. Texts will include Montaigne, *Essais*; Pascal, *Pensées*; Rousseau, *Les Confessions*; Baudelaire, *Mon cœur Mis à Nu*; Sartre, *Les Mots*; Hélène Cixous, *La Venue à l'Écriture*. Students will be asked to keep a journal of their readings. Conducted in French. Prerequisite: one third-year level course, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 180 SOCIETY AND THE LITERARY IMAGINATION IN NINETEENTH-CENTURY FRANCE

This course will examine the interaction between the French imagination and the social forces that shaped its literary expression in the nineteenth century. Taking as a point of departure the profound social changes engendered by the Industrial Revolution, the course will study the representation of society in exemplary works by Balzac, Stendhal, Flaubert, Zola, and Huysmans. The questions considered will include the fictional construct for such themes as problems in the representation of reality, the dynamics of class struggle, the relations between the individual and collective consciousness, and the metaphors of freedom and imprisonment.

Ms. March

Offered every other year

French 201 WOMEN IN THE MALE LITERARY IMAGINATION

Through the historical examination of a tradition central in shaping our notions of women, we will try to come to an understanding of the roles of women in the male imagination, and how these roles have affected women's fantasies and realities. Readings will include *Tristan et Iseut*, *La Nouvelle Héloïse*, *Les Liaisons Dangereuses*, *Madame Bovary*, *Une Vie*, *Nadja*, *Jules et Jim*, with reference throughout the course to relevant historical and theoretical texts. Conducted in French. Prerequisite: permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 202 WOMEN WRITERS

Through the fictional, autobiographical, and theoretical texts of twentieth-century women writers in France, we will explore the ways in which each writer's sense of herself and her culture is inscribed in her writing. Readings will include Colette, *Le Blé en Herbe*, *La Vagabonde*; Simone de Beauvoir, *Le Deuxième Sexe*, *La Femme Rompue*, *Une Mort Très Douce*; Marguerite Duras, *Hiroshima*, *Mon Amour*; Christiane Rochefort, *Le Repos du Guerrier*; Hélène Cixous, *Le Rire de la Méduse*. Prerequisite: French 131 or above, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 206 SPECIAL TOPICS IN FRENCH

Offered for variable credit.

Staff

Offered every semester

French 208 TEACHING LAB IN FRENCH

A teaching apprenticeship experience is offered to graduate students and to exceptional undergraduates who have demonstrated potential capability in this area. The teaching apprentice, under the supervision of the regular course instructor, is gradually exposed to all the aspects involved in teaching a foreign language course (planning and organization, preparation, presentation, evaluation) and is encouraged to become a coteacher to the greatest extent possible.

Staff

Offered every semester

French 252 MASTERPIECES OF EARLY FRENCH LITERATURE

An in-depth study of outstanding French literary masterpieces written before 1600. Particular attention will be given—in the medieval period—to the *Chanson de Roland* and the *Roman de Tristan et Iseut*; in the Renaissance—Rabelais's *Gargantua et Pantagruel* and other narrative writers including Marguerite de Navarre, Bonaventure des Périers, and Noël du Fail.

Mr. King

Offered every other year

French 261 SENIOR TUTORIAL FOR MAJORS

A program of extensive readings and tutorial meetings is designed to provide students with a broad view of the whole of French literature. The readings will be planned individually for each student in order to complement previous course work.

Staff

Offered every semester

French 275 CLASSICISM AND ROMANTICISM

An examination of two major psychological and literary styles using principally French masterworks of the seventeenth and nineteenth cen-

turies as examples for study. Classicism will be studied by close readings of plays by Corneille, Molière, and Racine, with some additional attention to other seventeenth-century genres. Romanticism will be studied by a brief examination of eighteenth-century divergence from Classicism, principally in the works of Jean-Jacques Rousseau, followed by detailed study of dramatists and poets between 1820 and 1860. Conducted in French.

Mr. King

Offered every other year

B. GERMAN

German 8 BASIC GERMAN CONVERSATION I

This one-semester course introduces students to basic German conversational patterns through the use of the highly successful "Guten Tag" film series. Every class session is based on a film which presents conversational material in an authentic cultural context. This course is recommended for students who wish a short-term exposure to German language study as a transition to the regular program.

Mr. Schatzberg

Offered every year

German 9 BASIC GERMAN CONVERSATION II

This one-semester course is a continuation of German 8. It introduces students to more advanced conversational patterns through the use of the highly successful "Guten Tag, Wie Geht's" film series. Every class session is based on a film which presents conversational material in an authentic cultural context. This course is recommended for students with some basic background in German who wish to stress the spoken language.

Mr. Schatzberg

Offered every year

German 10 READING KNOWLEDGE OF GERMAN

A course designed to give students in the sciences, social sciences, and humanities a basic knowledge of German with which they can begin to read independently specialized literature in their respective fields. Emphasis is placed, therefore, on essentials for reading comprehension and for translation. Indivisible course, open to juniors, seniors, and graduate students.

Mr. Kaiser

Not offered on a regular basis

German 11 INTRODUCTORY GERMAN

This course is designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. Indivisible course.

Mr. Schatzberg, Mr. Hughes

Offered every year

German 12 INTERMEDIATE GERMAN

This course begins with a review of German grammar. There will be reading and discussion of selections adapted from German-language newspapers and magazines. Significant works in prose and drama will be studied to acquaint students with outstanding writers and ideas in German literature and culture. Individual work in the language laboratory and weekly written assignments. Prerequisite: German 11, or equivalent background in the language.

Mr. Kaiser

Offered every semester

German 106 SPECIAL TOPICS IN GERMAN

Offered for variable credit.

Staff

Offered every semester

German 128 SPOKEN AND WRITTEN GERMAN

This third-year course aims at strengthening good speech habits with regard to German grammar and syntax, at expanding the active vocabulary, and at improving students' ability to express themselves in writing. Literary and journalistic texts will serve as a basis for discussion of important issues in contemporary German. Weekly written assignments. Recommended for majors. Prerequisite: German 12, or equivalent.

Mr. Kaiser, Mr. Hughes

Offered every year

German 130 MODERN GERMAN PROSE

This course is designed to familiarize the student with prose—from West and East Germany—by Kafka, Hesse, Mann, Böll, Grass, Plenzdorf, and Wolf; includes discussions, oral and short written reports in German.

Mr. Hughes

Offered every other year

German 134 WORKSHOP IN TRANSLATION

The object of this course is to give students a practical, concrete experience of what it means to "translate" from one language into another. The student will see that the process is not nearly so simple as it may have seemed, but that there is a scale of texts which range from the relatively easy to those that virtually defy rendering into another tongue. In the more difficult cases, it will be demonstrated that there is no such thing as a mere rendering of a text into another language, but that the process in, say, poetry, requires transposition of a whole cultural reflex into another. Various kinds of texts will be examined, from the sober style of the scientific article to the emotionally charged language of lyric poetry.

Mr. Hughes

Offered every other year

German 142 GERMAN ROMANTICISM

This is an analysis of German romanticism from its beginning in the 1790s to its decline in the 1830s, aesthetic credos, lyric poetry, the drama, major prose works (among them, the fairy tale as an art form) will be discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers, Hölderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E. T. A. Hoffmann, Eichendorff, and Heine. Prerequisite: German 12 or equivalent.

Mr. Kaiser

Offered every other year

German 145 THE GERMAN NOVELLE

The course is a historical and critical study of this uniquely German genre. Particular attention will be paid to narrative technique and to the typical features of the novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from early romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration will be discussed. Prerequisite: German 12 or equivalent.

Mr. Kaiser

Offered every other year

German 156 THE MODERN GERMAN SHORT STORY

After years of isolation and stagnation during the Nazi period and its collapse in 1945, young writers, eagerly trying to establish new values and anxious to link up again with the international literary developments, discovered the English and American short story with its well established tradition and adapted this model to the historical, social, and cultural conditions in Germany. The short story became the most important literary form during the post-war years and has maintained its significance to the present time. This course involves a careful reading of representative examples by leading modern German writers with special emphasis on thematic variety and structural complexities of the genre. Prerequisite: German 12, or equivalent.

Mr. Kaiser

Offered every other year

German 166 GERMAN DRAMA FROM LESSING TO EXPRESSIONISM

The course includes reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. The course will focus on the sociopolitical aspects of these works, the aims and concepts of the dramatic art, and the changing traditions of playwriting. Authors include Lessing, Goethe, Schiller, Kleist, Grillparzer, Büchner, Hebbel, Hauptmann, Schnitzler, and Kaiser. Prerequisite: German 12 or equivalent.

Mr. Kaiser

Offered every other year

German 206 SPECIAL TOPICS IN GERMAN

Offered for variable credit.

Staff

Offered every semester

GERMAN LITERATURE COURSES CONDUCTED IN ENGLISH

German 116 HESSE, KAFKA, MANN

A study of selected works including Hesse's *The Glass Bead Game*, Kafka's *The Trial* and *The Castle* and Thomas Mann's *The Magic Mountain*. The focus of the course will be on developing interpretations of individual works and contrasting the authors' literary techniques and world views. Also listed for credit as Comparative Literature 116.

Mr. Schatzberg

Offered every other year

German 125 HISTORY OF THE GERMAN CINEMA

This course will provide an overview of German films from Wiene's *The Cabinet of Dr. Caligari* (1919) to Herzog's *Nosferatu* (1979). The course structure will be as follows:

1. Silent Expressionism (Wiene, Lang, Murnau)
2. Early Sound Films (Sternberg, Lang)
3. The Third Reich (Riefenstahl)
4. Aftermath of Defeat (Hoffmann, Käutner, Wicki)
5. The New German Cinema (Fassbinder, Schlöndorff, Wenders, Herzog)

Students will be expected to study the films, read about and research their historical background, write short film critiques, and produce a substantial final paper dealing with some aspect of German Cinema. The course will be conducted in English, but students may take the course for German language credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 168 MUSIC IN GERMAN LITERATURE AND THOUGHT

Countless musicians, philosophers, and writers have speculated on the nature of music, its mysterious power to influence people and communicate strong feelings. The course will be devoted to reading and discussion of works by the following authors from the German-speaking countries of the nineteenth and twentieth centuries: Wackenroder, Novalis, Kleist, Schopenhauer, E. T. A. Hoffmann, Goethe, Grillparzer, Heine, Mörike, Wagner, Nietzsche, Hesse, and Thomas Mann. The approach will be predominantly thematic; however, several works will be studied which reveal the author's successful attempts to employ musical devices and structures in his literary creations. Also listed for credit as Comparative Literature 168.

Mr. Kaiser

Offered every other year

German 183 KAFKA SEMINAR

The course involves a careful study of Kafka's novels, short stories, parables, and aphorisms. Prerequisite: some familiarity with the major short stories and novels of Kafka. Also listed for credit as Comparative Literature 183.

Mr. Schatzberg

Offered every other year

German 186 GERMAN EXPRESSIONISM IN LITERATURE, FILM, AND PAINTING

This course offers an interdisciplinary exploration of the modernist movement in German literature, film, and painting in the pre- and post-World War I period, 1910-1924. The following works and authors will be studied within the cultural context of the period:

Drama: Wedekind, Kaiser, Toller, Sternheim

Prose: Benn, Döblin, H. Mann, Kafka, Musil

Film: *Caligari*, *Golem*, *Nosferatu*, *The Last Laugh*, *Warning Shadows*, *Metropolis*

Painting: "The Blue Rider", "Die Brücke"

The course will be conducted in English, but may be taken for German credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 188 THE CULTURE OF THE WEIMAR REPUBLIC IN LITERATURE, FILM, AND THE ARTS

This course will examine social and political satire and efforts at cultural regeneration between the First World War and the rise of Nazism. The following works will be studied within the cultural context of the period:

Prose: Hesse's *The Steppenwolf*, Döblin's *Berlin Alexanderplatz*, Remarque's *All Quiet on the Western Front*

Drama: Brecht's *A Man's a Man*, *St. Joan of the Stockyards*, *The Measures Taken*; Zuckmayer's *The Captain from Köpenick*

Musicals: *Rise and Fall of the City of Mahagonny*, *The Three Penny Opera* (Brecht/Weil)

Film: *M*, *The Blue Angel*, *The Three Penny Opera*, *Berlin Alexanderplatz*, *Kuhle Wampe*

Painting: Georg Gross, Max Beckmann, Otto Dix

Architecture: The Bauhaus School

The course will be conducted in English, but students may receive

German credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 197 THE FAUST THEME IN LITERATURE AND MUSIC

A study of man's search for forbidden knowledge and power as represented in literature and music by the character of Faust from the Reformation to the present. The legend of the defiant necromancer who sold his soul to the devil emerged in the sixteenth century and developed into one of the great themes of Western literature. Faust is the representative of each age in which he appears. He may be a universal figure embodying the ideal man, as he does in Goethe's masterpiece; or he may be the incarnation of the sin characteristic of an age or a nation, as he is in Thomas Mann's *Doctor Faustus*. The course will explore the changing concepts of Faust from the beginnings of the legend in German folklore to the present, concentrating on the following major treatments of the theme: *The History of the Damnable Life*, and *Deserved Death of Doctor John Faustus* (1582), Marlowe's *Dr. Faustus*, Klinger's *Faustus, His Life, Death and Doom*, Goethe's *Faust*, Part I and II, Thomas Mann's *Dr. Faustus*, Paul Valéry's *Mon Faust* and some of the operatic treatments such as Gounod's *Faust*, Berlioz's *The Damnation of Faust*, Boito's *Mefistofele*, Busoni's *Doctor Faustus*. No prerequisites. Also listed for credit as Comparative Literature 197.

Mr. Kaiser

Offered every other year

C. HEBREW

Hebrew 11 ELEMENTARY HEBREW

Modern, conversational Hebrew. Emphasis on speaking, reading, writing, and listening skills. Acquisition of vocabulary and basic grammar through conversation, drills, reading of simple texts, and listening to tapes. Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Indivisible course.

Ms. Nathanson

Offered every year

Hebrew 12 INTERMEDIATE HEBREW

A survey of significant Hebrew texts of the Biblical and post-Biblical period. Enrichment and reinforcement of verbal expressions and grammatical structures. Classes will meet twice weekly and will be supplemented by individual work in the language laboratory and one hour of drill. Reading knowledge of Hebrew required.

Mr. Waldoks

Offered every year

Hebrew 13 ADVANCED INTERMEDIATE HEBREW

A survey of significant Hebrew texts of the pre-modern and modern periods. Literature and newspapers will be employed. Enrichment of verbal and written expressions and grammatical structures. Classes will meet twice weekly and will be supplemented by individual work in the language laboratory and one hour of drill. Reading knowledge of Hebrew required.

Mr. Waldoks

Offered every year

Hebrew 130/131 ADVANCED HEBREW

Readings of contemporary Hebrew prose, poetry, and drama. Emphasis is on spoken language, literary analysis, and composition. Prerequisite: Intermediate Hebrew or equivalent.

Ms. Nathanson, Mr. Waldoks

Offered every year

HEBREW LITERATURE/JUDAIC STUDIES COURSES CONDUCTED IN ENGLISH

Hebrew 119 THE PENTATEUCH

A survey of the five books of Moses focusing upon the development of basic Jewish religious themes. No Hebrew language background required. Conducted in English.

Mr. Davids

Offered every other year

Hebrew 120 THE PROPHETS OF ISRAEL

This course will be directed toward a study of the prophets as men of thought. Emphasis will be placed upon the development of prophetic literature, the psychology of prophecy, the prophet as religiopolitical activist, and the prophet as spokesman for ethical idealism. Study will focus upon Elijah (ecstatic prophecy), First Isaiah (prophetic hope), Jeremiah (religious reformation), Ezekiel (Diaspora Judaism), Amos (the prophet as social critic), Hosea (divine love), and Micah (reflections on the future).

Mr. Davids

Offered every other year

Hebrew 122 THE EVOLUTION OF JEWISH LITURGY

The Jewish prayer book is a fascinating source for theological, historical, and sociological insights into the nature of the Jewish people. This course will explore, in English translation, the basic rubrics of Jewish worship and draw comparisons and contrasts between and among Jewish worship patterns, ancient and modern. No Hebrew prerequisite.

Mr. Davids

Offered every other year

Hebrew 160 MODERN ISRAELI LITERATURE

The literature of Israel since 1948 ranges from the profoundly religious to the starkly secular. The unique nature of the dreams and yearnings of the contemporary Jewish nation is revealed through a careful study of that literature. We will study (in English translation) the works of Agnon, Hazaz, Megged, Amihai, and others. No Hebrew language prerequisite.

Mr. Davids

Offered every other year

Hebrew 170 IMAGES OF THE JEW IN LITERATURE, ART AND POPULAR CULTURE

An examination of the images of the Jew, from the Roman period to the present, as reflected in the literature, art, and popular culture of the time. A study of the origins of Jewish stereotypes and their effects on Jews and society.

Ms. Nathanson

Offered every other year

D. RUSSIAN

Clark students may take additional courses in Russian language and literature at the College of the Holy Cross through the Worcester Consortium for Higher Education.

Russian 11 INTRODUCTORY RUSSIAN

This course is an introduction to the written and spoken language. It consists of three class periods and three laboratory sessions a week. Indivisible course.

Mr. Hughes

Offered every year

Russian 12 INTERMEDIATE RUSSIAN

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods and laboratory sessions per week.

Mr. Hughes

Offered every year

Russian 106 DIRECTED READINGS

Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian. Offered for variable credit.

Mr. Hughes

RUSSIAN LITERATURE COURSES CONDUCTED IN ENGLISH

Russian 185 THE RUSSIAN NOVEL IN THE NINETEENTH CENTURY

An examination of representative great Russian epics of the last century in English translation. They are considered both as works of literary art and as social and historical artifacts. Readings may vary owing to the availability of texts but will probably include Tolstoy's *Anna Karenina*, Dostoevsky's *The Brothers Karamazov*, Gogol's *Dead Souls*, Goncharov's *Oblomov* and Turgenev's *Fathers and Children*. Some reading in Russian intellectual history and in the "radical democratic" critics. Also listed for credit as Comparative Literature 185.

Mr. Hughes

Offered every other year

Russian 187 THE RUSSIAN NOVEL IN THE TWENTIETH CENTURY

A consideration of representative Russian novels of the twentieth century—in English translation—in their historical and social context. Readings may vary depending on the availability of texts but will probably include such pro-Soviet works of "socialist realism" as Gorky's *Mother* and Sholokhov's *Quiet Flows the Don*, experimental fiction like Zamyatin's *We*, and counterrevolutionary works such as Pasternak's *Dr. Zhivago*, Bulgakov's *Master and Margarita*, and Solzhenitsyn's *Cancer Ward*. Some reading in Russian intellectual history and in the formalist and Marxist critics. Also listed for credit as Comparative Literature 187.

Mr. Hughes

Offered every other year

E. SPANISH

Spanish 11 ELEMENTARY SPANISH

This course is for beginners or others not yet qualified to enter the intermediate courses. Students receive grounding in all four language skills (hearing, speaking, reading, writing) as preparation for subsequent courses conducted in the language. There will be three hours of class contact per week plus individual work in the language laboratory. Indivisible course.

Mr. D'Lugo, Mr. Ferguson, Ms. Jiménez

Offered every semester

Spanish 12 INTERMEDIATE SPANISH

This course offers consolidation of basic skills in the language for students who previously have completed Spanish 11 or its equivalent. First

semester stresses development of oral facility in Spanish through a variety of exercises including taped interviews with native speakers, improvisational acting in brief scenes from plays, and discussions based upon readings related to topics of Hispanic culture and society. Grammar review will be based upon the specific needs of the group. Prerequisite: Spanish 11 or equivalent skill in the language. Spring semester will include more extensive readings on themes of Hispanic culture as the basis for class discussion and essay assignments. The focus of the spring semester will be those activities in speaking, reading, and writing that provide the student with sufficient mastery of basic skills in Spanish to allow for reasonable adjustment to advanced course work in Hispanic studies.

Ms. Jiménez, Mr. Ortiz

Offered every semester

Spanish 106 SPECIAL TOPICS IN SPANISH

Variable credit; topics at the discretion of the instructor.

Staff

Offered every semester

Spanish 127 PRACTICE IN ORAL AND WRITTEN SPANISH

This is an advanced intermediate course to help students develop fluency and accuracy in the spoken and written language. Classes will stress composition and pronunciation as well as conversation practice. May be taken after the first semester of Spanish 12 with permission of the instructor.

Mr. Ferguson, Mr. Ortiz

Offered every other year

Spanish 131 READINGS IN MODERN SPANISH-AMERICAN LITERATURE

Third-year level. An introduction to the artistic and cultural variety of modern Spanish-American narrative prose. Emphasis will be on both the creative vision of contemporary writers and on the cultural context out of which these contemporary masterpieces arise. Selections from Borges, Cortázar, Rulfo, Donoso, Fuentes and Cabrera Infante, representing Argentina, Mexico, Chile and Cuba. Conducted in Spanish. Prerequisite: Spanish 12 or equivalent skill in the language.

Mr. D'Lugo

Offered every year

Spanish 132 INTRODUCTION TO SPANISH LITERATURE OF THE TWENTIETH CENTURY

The course offers reading and discussion of selected works from the Generation of 1898 to the contemporary period (Unamuno, Pío Baroja, García Lorca, Cela, Buero Vallejo, Sastre, Goytisolo). Emphasis is on structures of conflict within dramatic and narrative works, including selected recent Spanish films: individual vs. the group as seen particularly in the depiction of the Spanish Civil War in contemporary literature; the artist's conception of cultural continuity; the themes of modernity and change as reflected in the works of more recent writers. Conducted in Spanish.

Mr. D'Lugo

Offered every year

Spanish 133 HISPANIC THEMES

This is a third-year course of readings and discussions intended to introduce the student to the diversity of Hispanic culture through a close consideration and analysis of a limited number of problems as reflected in selected readings from literature, history, and cultural an-

thropology as well as current periodicals in Spanish. The course will focus on one or two of the following national cultures: Chile, Cuba, Mexico, Spain, Argentina. Topics normally covered include: parallel development of Anglo-American and Hispanic cultural institutions, changing identity of the family and the individual in twentieth-century society, the emerging identities of women in these societies and a comparison with the traditional Hispanic definition of women's role. Readings and discussions will be in Spanish.

Mr. Ferguson

Offered every year

Spanish 134 ASPECTS OF MEXICO: MÉXICO CONTEMPORÁNEO

An introduction to the history and cultural diversity of Mexico as seen through the writings of particular social and political writers and, in some special instances, through fictional and dramatic works. The course will attempt to balance the historical and geographical conditions of Mexico in its historical development with a consideration of the attitudes of particular social and political thinkers of the contemporary period. Some consideration will be given to the major historical periods in the development of the Mexican nation: Conquest, The Spanish Colonial Period, Mexican Independence, The Revolution of 1910, Contemporary Problems.

Mr. Ortiz, Mr. D'Lugo

Offered every other year

Spanish 135 HISPANIC ETHOS AND CINEMA: UNDERDEVELOPMENT

An examination of Spanish-language cinema as cultural reflection and artistic form within the Hispanic world. The course will involve consideration of a number of major filmmakers from Spain, Mexico and Cuba, with an emphasis on the ways in which these directors capture certain cultural patterns of underdevelopment within their films and use these patterns as part of a critique of Hispanic society and institutions. Readings include film scripts, critical readings, and source narratives. Classwork consists of viewing, discussion, and close analysis of ten major films. Attendance at evening screenings is required.

Mr. D'Lugo

Offered every other year

Spanish 136 WOMEN IN HISPANIC LITERATURE

This course analyzes the role of women in Hispanic culture from its beginnings to the present. The emphasis is on the link between the patriarchal social order and violence against women. Readings include major works from both the Spanish and Latin American tradition. Prerequisite: Spanish 131 or equivalent skill in the language.

Ms. Jiménez

Offered every other year

Spanish 137 ADVANCED ORAL AND WRITTEN SPANISH

A third-year level course, this is a rapid review of grammar and style, with exercises in composition, pronunciation, and intonation. It is intended to allow the student with one or more years of advanced college work in Spanish (or equivalent) the opportunity for refinement and mastery of both written and spoken Spanish. Emphasis will be placed upon control and accuracy of expression in writing through regular compositions and translation exercises as well as work in phonetics and diction. Prerequisite: Spanish 131 and one course above that level.

Ms. Jiménez

Offered every other year

Spanish 138 HISPANIC LITERATURE OF POLITICAL COMMITMENT

A study of the creative writer's position *vis-à-vis* the social and political movements of the twentieth century. Writers discussed will include Neruda, Vallejo, Hernández, and Cardenal; Cuban writers and poets in their sometimes ambiguous relationship to the Revolution; the writers of the Chicano movement and the dream of Aztlán; and Puerto Rican authors both on the mainland and on their native island. The course will be conducted in English; a reading knowledge of Spanish is required. Prerequisite: Spanish 131 or permission of the instructor.

Mr. Ferguson

Offered every year

Spanish 140 SPANISH DRAMATIC EXPRESSION/PLAY PRODUCTION

This course is intended to provide the student who has completed Spanish 12 or equivalent with an opportunity to develop and refine habits of gesticulation, rhythm, and intonation of contemporary spoken Spanish. The course will include close work on two contemporary dramatic works, which will give the student practical experience in the skills of interpersonal encounters in which control of oral expression is required. Although some consideration will be given to the texts as dramatic works, the course is principally a workshop in advanced oral Spanish. Prerequisites: Spanish 12 or equivalent skill in the language.

Mr. D'Lugo, Mr. Ortiz

Offered every year

Spanish 141 SPANISH TRANSLATION WORKSHOP

As the title indicates, this is a *workshop* and not a descriptive course in the techniques of translation. The purpose of the course is to enable students to translate printed data (commercial, technical, scientific, comic strips, etc.) from Spanish into English and *vice-versa*. The course will be based on a linguistic approach and will consist of formal sessions in which this basic theory and its diverse techniques will be taught—plus the workshops. During the workshops, printed materials will be distributed to the students for them to translate. The workshop sessions will be the testing ground for the theory expounded during the “magisterial” lessons. Other exercises will cover these aspects: morphemes, lexicon and cognates, syntagmatic sequences, clauses, and sentences. Paragraph and “textual” translation will be dealt with separately. Prerequisites: language majors—four college semesters of Spanish or equivalent; linguistics majors—a course in at least one of the following: general linguistics, theoretical linguistics, transformational grammar, semantics. Spanish 131 or permission of instructor.

Mr. Ortiz

Offered every year

Spanish 143 SPANISH ESSAY AND THOUGHT

The course consists of readings and discussions of selected essays from influential writers of Spain and Spanish America as these express the cultural, social, political, and ethnic values and concerns of the Spanish-speaking people. Readings will reflect both the traditional notions of Hispanic society as well as contemporary views as posed in recent magazines, periodicals, and newspapers. Prerequisite: Spanish 131 or permission of instructor.

Mr. Ortiz

Offered every other year

Spanish 145 SPANISH-AMERICAN SHORT STORY

An introduction to the tradition and development of shorter narratives in Spanish America. Class discussion and readings will emphasize the

richness of artistic innovation from the earliest "primitive" narrations of colonial chroniclers through the progressive refinements of theme, local color, style, and narrative technique characteristic of this oldest and most favored of Spanish American literary genres. Particular attention will be paid to those authors and stories that represent the landmarks in the shorter narrative tradition: writings of Rubén Darío, Horacio Quiroga, Borges, Fuentes, Cortázar, Rulfo. Conducted in Spanish.

Mr. Ferguson

Offered every other year

Spanish 146 SPAIN AT THE CROSSROADS

A consideration of post-Franco Spain, as reflected in literature, film, theater, and journalism. In addition, an examination of recent political and historical writings that have attempted to expound integrated visions of the "new" Spanish society. Prerequisite: Spanish 131 or permission of the instructor.

Mr. D'Lugo

Offered every other year

Spanish 171 CONTEMPORARY MEXICAN NARRATIVE

Reading and discussion of selected works in novel and short story by principal Mexican authors of the last twenty five years. Selections will stress the variety of themes and subject matter (urban and rural novels and the traditions in Mexico and Spanish America which specific writers have redefined in their own works) as well as particular innovations in narrative forms (the time-space structures of Carlos Fuentes' novels and short stories; the multiple perspective in fiction as embodied in the writings of Rulfo, Arreola, Yáñez.) Some specific attention will be paid to the authors of more recent years who have developed into what has been frequently called *la generación joven*.

Mr. Ortiz, Mr. D'Lugo

Offered every other year

Spanish 206 SPECIAL TOPICS IN SPANISH

Variable credit.

Staff

Offered every semester

Spanish 207 FIELD WORK IN THE HISPANIC COMMUNITY

Students will have supervised contact and work in one of a variety of community agencies and projects servicing the Hispanic community in Worcester (bilingual school programs, Casa de la Comunidad, Worcester Legal Services, etc.). Students participating in particular field projects will be assigned to a member of the department and/or persons in related academic departments. Under the direction of the adviser, students will be placed in a particular community project. Through consultation with the campus adviser and a designated supervisor from the cooperating agency, the student will work with members of the Hispanic community while developing a written project related to the particulars of language, culture, and related problems of the bilingual community in Worcester. Prerequisites: proficiency in Spanish as determined by the department; successful completion of course work in the field or fields related to the specific project area; permission of instructor. Offered for variable credit.

Ms. Nigrosh, Mr. D'Lugo

Offered every semester

Spanish 247 NARRATIVE LANDMARKS IN THE HISPANIC TRADITION

A consideration of the evolution of the narrative tradition in the Hispanic world and the ways in which Hispanic writers have combined

cultural concerns with the development of an innovative narrative style. The course consists of close readings of a number of major works of Spanish and Spanish-American literature which establish the underlying continuity of the Hispanic narrative tradition. Major authors to be considered include: Cervantes, Galdós, Unamuno, and Valle-Inclán in Spain; Borges, Cortázar, Rulfo, Fuentes, García Márquez, and Cabrera Infante in Spanish America.

Mr. D'Lugo Offered every other year

Spanish 250 LYRIC MASTERPIECES OF SPAIN AND HISPANIC AMERICA

A study of representative lyric texts selected from all centuries of Hispanic literature, with accompanying investigations into other cultures which influenced these compositions or were influenced by them. Crosslisted as Comparative Literature 250. Basic poetic texts will be read in Spanish; Spanish majors also will be expected to write a term paper in Spanish. No final examination. Prerequisite for Spanish majors only: Spanish 131 or permission of the instructor.

Mr. Ferguson Offered every other year

Spanish 252 HISTORY, MYTH, "MYTHOLOGIES": COMPARATIVE FICTION OF THE CARIBBEAN

This course will emphasize the literature of the Hispanic Caribbean within the context of socio-political developments that affect the entire Caribbean. In addition, we shall also consider the question of the nature of representation. Several theories of representation will be discussed, including the notion of "magical realism," *la novela testimonio*, and "mythologies" or the semiology of popular culture. Readings will be in Spanish. Also listed for credit as Comparative Literature 252.

Ms. Jiménez Offered every other year

INTERNSHIPS IN MEXICO

Available through our ITESO program: Communications, Community Development, Education. Planned for 1983: Government, Women in the Developing World, Third World Issues.

French

See Department of Foreign Languages and Literatures.

Geography

DEPARTMENT FACULTY

Leonard Berry, Ph.D., Professor of Geography, Director, Graduate School of Geography; Codirector, Program of International Development and Social Change

Martyn J. Bowden, Ph.D., Professor of Geography

Saul B. Cohen, Ph.D., Research Professor of Geography

Gerald J. Karaska, Ph.D., Professor of Geography, Editor of *Economic Geography*

Roger Kasperson, Ph.D., Professor of Geography and of Government

Robert W. Kates, Ph.D., Professor of Geography and Research Professor
 in the Center for Technology, Environment and Development
 Duane S. Knos, Ph.D., Professor of Geography
 William A. Koelsch, Ph.D., Professor of History and Geography
 David C. Major, Ph.D., Research Professor of Applied Economics
 Harry E. Schwarz, B.C.E., Professor of Environmental Affairs
 Susan Hanson, Ph.D., Associate Professor of Geography
 Douglas L. Johnson, Ph.D., Associate Professor of Geography
 Laurence A. Lewis, Ph.D., Associate Professor of Geography
 J. Richard Peet, Ph.D., Associate Professor of Geography
 Harry Steward, Ph.D., Associate Professor of Geography
 Billie Lee Turner II, Ph.D., Associate Professor of Geography
 Kirsten Johnson, Ph.D., Assistant Professor of Geography
 Sharon Nicholson, Ph.D., Assistant Professor of Geography
 Raymond E. Murphy, Ph.D., Professor of Geography, Emeritus
 Dennis Ducsik, Ph.D., Assistant Professor of Science, Technology and
 Society, Adjunct in Geography
 Anne Buttimer, Ph.D., Affiliate Professor of Geography
 Daniel M. Dworkin, Ph.D., Affiliate Associate Professor of Geography
 Philip O'Keefe, Ph.D., Affiliate Associate Professor of Geography

STAFF

Timothy Fast, Cartographer and Cartography Laboratory Manager
 Katherine A. Parella, Administrative Assistant

When the Graduate School of Geography was organized in 1921, Clark became the second university in the United States to establish a separate graduate program in geography. At present, advanced training is provided leading to the master's and doctor's degrees. In addition, the school offers an undergraduate major and a seven-year program (B.A./Ph.D. degree). Clark is a center for geographical training and research in the United States and its various offerings provide a maximum of individual attention through student-teacher dialogue.

PUBLICATIONS

A professional magazine, *Economic Geography*, is edited by a faculty member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic and urban geography. The magazine has a worldwide distribution with a total circulation of about 5,000.

Through the years, graduate students have maintained the Clark University Geographical Society (CUGS). The annual publication, *Monadnock*, keeps School of Geography alumni in touch with each other and with news and scholarly activities of the school.

The *Annals of the Association of American Geographers* is the principal outlet for major scholarly articles in geography. Published quarterly, the journal prints papers on a wide variety of topics representative of contemporary geographic research. A Clark faculty member, Susan Hanson, is now coeditor of the *Annals*.

In addition, some students and faculty members edit and produce another publication, *Antipode*.

The scientific work of some members of the department is published

in the CENTED (Center for Technology, Environment and Development) publication series at Clark University.

GEOGRAPHY UNDERGRADUATE PROGRAM

The Undergraduate Geography Program covers a three-year period (sophomore-senior), during which 50–80 percent of the course time is to be accounted for within the program. A minimum set of geography requirements is built into the major, and much of the students' work in cognate fields will be carried on through the advice of the adviser and in the context of individual needs and capacities.

Emphasis in the undergraduate major in geography is on broad training in the field. Within this training, some specialization is then facilitated by the organization of courses in *streams* and students are encouraged to take a *series* of courses in one or two of these streams. Geography majors are encouraged to gain skills in quantitative methods, computer programming, mapping, and research methods.

There is a formally structured departmental advisory system in which every declared undergraduate major has a specific adviser. The student course selection each semester must be approved by the adviser.

Courses are sequential to allow progressively greater use of skills from 00-level to 100-level to 200-level courses. The recognized areas of concentrated interest (streams) at the undergraduate level are:

- a) cultural/humanistic
- b) environmental affairs/management
- c) physical geography of human systems
- d) regional/international development/political economy
- e) urban/social/planning
- f) cartography (Because cartography has fewer faculty than the other groups, there will be limited offerings in this area.)

REQUIREMENTS FOR GEOGRAPHY MAJORS

To graduate as a geography major, the student must complete the following courses (A note of fulfillment will be kept by the student's adviser.):

1. Within the Graduate School of Geography

- (a) Geography 011 Survey of Geography
- (b) Two courses selected from among the following:
 - Geography 014 Introduction to Physical Geography
 - Geography 015 Introduction to Economic Geography
 - Geography 017 Introduction to Cultural Geography
 - Geography 018 Introduction to Urban Geography
 - Geography 057 Cycles in the Biosphere: Introduction to Environmental Management
- (c) Two skills courses selected from among the following:
 - Geography 110 Computer and Quantitative Methods: Introduction
 - Geography 247 Computer and Quantitative Methods: Intermediate.

Geography 181 Introduction to Cartography *or* an advanced cartography *or* remote sensing course.

Geography 137 Time and Space in Old and New England—for students in the cultural-humanistic stream.

Geography 141 Research Methods in Geography

In addition, the department will accept a second-year, second-semester language course as a skill. Other courses equivalent to those listed above may be accepted by the student's adviser.

- (d) A 100-level course taken as a "writing course"
- (e) A 200-level problems course
- (f) A 200-level course in the same stream as the problems course
- (g) At least three other courses in geography in addition to those above (100-level or above)
- (h) At least two geography courses other than (e) and (f) must be taken at the 200-level

2. *In Disciplines Related to Geography*

Four elective courses in related disciplines.

DUAL MAJOR: REQUIREMENTS

For students majoring in geography and another discipline, the requirements are: Survey of Geography (011); one 00-level introductory course; two skills courses; a 100-level writing course; a 200-level problems course; a 200-level course in the same stream as the problems course.

SEVEN-YEAR B.A./PH.D. PROGRAM

A formal seven-year program for Clark undergraduate students is offered, leading to the Ph.D. degree in geography. At the undergraduate level, applicants must major in geography or a dual or interdisciplinary field, and make application at the end of the first semester of the junior year. The B.A./Ph.D. program may include the sixth year off campus, in residence at another university or agency. Admissions are limited to a very small number of highly-qualified students and in subfields of concentration that are approximate to Clark's range of offerings. For specific information, contact the director of the School of Geography. Applications to these programs should be submitted to the Geography Office no later than February 15.

THE GRADUATE SCHOOL OF GEOGRAPHY PH.D. PROGRAM

Admissions: Applicants with or without prior training in geography are welcome. Depending on their concentrations, they may be required to improve their knowledge of elements of geography, cartography, or descriptive statistics. Courses taken to remedy any deficiencies will not count as part of the regular program. The Graduate Record Examination scores (verbal and quantitative) are required of all students with the exception of those in foreign countries.

Graduate Program: The graduate program in geography at Clark has been derived from a synthesis of faculty-student discussions, documents, and experiences. The Ph.D. training program is the central thrust in the Graduate School of Geography at Clark. Under special circumstances, however, a predoctoral or a nondoctoral M.A. is available. (See the departmental handbook for details concerning these degrees.)

Degree Objectives: The graduate program in geography at Clark recognizes a basic difference in emphasis between undergraduate and graduate education. Undergraduate education stresses the mastery of content and skills associated with sets of disciplines that presumably have relevance to future careers and lifestyles. Graduate education, on the other hand, eases entry into a community of professional scholars-

learners who learn outside the formal structure of the classroom. Such scholars are skilled in constructing learning experiences for themselves and in structuring their learning in a form that suggests avenues in the continuing development of their fields of study. The program of study aims at providing experiences that nurture the development of the knowledge and skills essential to that mode of learning.

As prospective members of this geography community, graduate students work toward the following objectives:

- 1) development of extensive knowledge in the content of geography and competence in the use of research skills
- 2) development of a sense of problem (for research problems are at the core of an experiential learning process)
- 3) development of divergent thinking skills from which creative and original ideas evolve
- 4) development of a sense of the tentativeness of knowledge and a patience with ambiguity
- 5) development of a tough-minded learning discipline
- 6) development of a sense of self-confidence and competence
- 7) development of a sense of the nature of the community of geographers

The program is designed to enable students to focus their learning experience with these philosophical guidelines in mind. These objectives are not meant to superimpose limitations, but to provide a personal focus for students.

Program Structure: The graduate curriculum is organized to give a broad view of the field of geography and its teaching, as well as a specialized approach to selected subfields. The subfields, organized in accordance with the interests and competencies of the staff, include: Cultural/Humanistic, Environmental Affairs Management, Physical Geography of Human Systems, Regional/International Development/Political Economy, Urban/Social Planning. In addition, ongoing projects conducted by research groups in the Geography Department, International Development Program and the Center for Technology, Environment and Development (CENTED) should be considered an integral part of the graduate curriculum; students may choose to structure their programs around such collaborative research endeavors. (See appropriate sections on CENTED and International Development.)

Students or faculty who do not wish to operate within the framework of a formal subfield may create personalized programs or fields of concentration outside of the formal subfields; these options are limited only by the general nature of the offerings and the interests and competencies of the staff.

The first year of graduate study (for the incoming B.A. or B.S.) is planned to broaden the student's knowledge of the field of geography and help define student interests in the context of the Clark program. For the incoming M.A., this period will help the student become familiar with the field of geography at Clark. Courses, including directed readings, are the primary mode of study. Students are encouraged to take two or three "problems" courses and to sit in on the meetings and seminars of at least one research group.

A departmental colloquium course serves the entire community with the expectation that all graduate students and faculty will attend. Themes for the course vary from year to year. The course introduces first-year students to the program and to ongoing intellectual work in the department.

Toward the end of the first year, a formal review of the student's work and planned future program will be conducted by a three-member First Year Advisory Committee. This evaluation and planning review is a vital diagnostic tool, which identifies problems or needs, and plans for development.

The First Year Advisory Committee continues in its advisory role throughout the second year. The student consults with committee members on a regular basis to establish specific goals for this phase of graduate study, to discuss problems and progress, and to present the products of the student's work.

The second year should emphasize the graduate learning mode through in-depth work in the student's field of interest, through focus on problem formulation, and through direct experience with research. To this end, the student generally will not enroll in formal courses for the first semester of the second year, unless there are particular reasons to do so. Usually, this year involves working closely with a single faculty member or a group of faculty and students in a teaching, research, or applied activity.

The remainder of the second year is devoted to the progressive development of conceptual depth and skills, with a focus on background work in the dissertation field proposal formulation, and preparation for the doctoral examination. An effort should be made to integrate these tasks within a comprehensive research program. Students are encouraged to structure their programs around collaborative research projects with each other and with committee members engaged in ongoing research efforts. In general, students should have completed their skills requirements by the end of the second year.

No later than the end of the second year, a doctoral examination committee will be established unless the advisory committee has determined that another course should be taken.

The doctoral examination committee encourages breadth in substantive pursuits as well as a certain depth of knowledge of methodological and philosophical concerns relevant to a student's interests.

Normally a student will complete the doctoral examination before embarking on a dissertation. The dissertation is a culminating learning experience and is organic to the individual's continuing scholarship. As such, the year in which the dissertation proposal is submitted and approved must be a year in which the student is in residence and such residence shall continue for one additional semester after approval. (See Departmental Handbook for details.)

Residence Requirement

A three-year residence beyond the B.A. degree is required for the Ph.D. program. Students entering with an M.A. in a field other than geography will be expected to take essentially the three-year residence program. Students entering with an M.A. in geography from another institution may expect to complete their residence in five semesters or two and one-half years.

Teaching and Research Prerequisite

Some teaching and research experience at Clark is prerequisite to the doctor's degree and the terminal M.A. degree. Every effort is made to organize various forms of internships to provide on- and off-campus training activities, at the teaching and research levels.

DISTINCTIVE FEATURES AND SPECIALIZATION

The Graduate School of Geography is housed in modern quarters in the University's Academic Center. In the Geography Building, the Geography Workroom provides assigned study space for graduate students and houses the John K. Wright Reading Room. The reading room contains the personal library of Dr. Wright and regularly updated publications in the field of geography and subscriptions to geographic journals. Readings for geography coursework are held on reserve here. The Libbey Library serves as a lounge for graduate students.

The *Guy H. Burnham Map Library* is a multifaceted, special library staffed by a professional librarian. The collection consists of over 130,000 maps, charts, atlases, aerial photographs, and globes, and is a depository for maps and charts from federal agencies. Many supportive materials are on hand; others can be obtained through interlibrary cooperation. The library is designed to meet the geographic needs of the Clark community and the central Massachusetts area.

The *Clark University Cartographic Service and Cartography Classrooms* are located in the lower level of the Academic Center. This area provides students with specialized workspace and a variety of up-to-date cartographic equipment, including a newly enlarged graphic arts darkroom, a stereo-facet plotter, and a complete micro-computer/digitizer system.

Cross-Disciplinary Training (as evidenced by the joint appointments held by geography faculty with other departments); the clustering of faculty research and teaching interests in several areas related to environmental affairs/management, cultural/humanistic, physical geography of human systems, regional/international development/political economy, urban/social/planning, and cartography currently characterize the school.

The School of Geography fosters *student and faculty exchange* with other institutions, including institutions outside the field of geography and with geography departments elsewhere. Clark has long encouraged ties with foreign students and faculty. Focus in recent years also has included links with development institutions in the United States and elsewhere by training prospective faculty and by facilitating programs.

COURSES

011 SURVEY OF GEOGRAPHY

A survey of major concepts in modern geography. Emphasis is placed on the various approaches to geographic research currently conducted in the Graduate School of Geography. Physical (climatology, soils, biogeography, and landform studies), cultural, historical, economic, urban, and social themes are developed, with approximately one third of the lectures given by faculty other than the major instructor. The course is designed primarily for freshmen and sophomores and is a required course for geography majors.

Mr. Johnson, Mr. Bowden

Offered every year

013 FIELD STUDIES OF ENVIRONMENTAL ISSUES

Explore the Worcester region and its environmental issues, learn to do field research, to analyze findings, to present results to others. Limited to freshmen and sophomores only, and to those who are willing to work together in small groups. Also listed for credit as Environmental Affairs.

Mr. Kates

Offered every other year

014 INTRODUCTION TO PHYSICAL GEOGRAPHY

This course is a basic inquiry into components of geomorphology and climatology. The role of man as a critical agent in physical geography is included by looking at inadvertent climatic modification and alteration of the earth's surface by man's activities. Course includes labs and field trip.

Mr. Berry, Mr. Lewis

Offered every year

015 INTRODUCTION TO ECONOMIC GEOGRAPHY

Theories of the geography of the production of human existence out of nature are presented. The course emphasizes significant economic, social, and environmental problems. These include over-population, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness. Also listed for credit as International Development 015

Mr. Peet

Offered every year

017 INTRODUCTION TO CULTURAL GEOGRAPHY

The course is an ecological and historical approach to the study of cultures and cultural change in a spatial context. A series of broad themes and problems are illustrated by case studies set mainly in North America. Among major themes considered are: adaptation to the "natural" environment, culture in prehistory, migration and the creation of culture areas (particularly New Mexico), the world views of primitive, traditional, and industrial culture, cultural landscape and the cultural geography of the United States. One discussion section each week in addition to lectures.

Mr. Bowden, Mr. Johnson

Offered every year

018 INTRODUCTION TO URBAN GEOGRAPHY

An introduction to the study of urban form, function, and problems. Themes to be pursued include the process of urbanization, migration, community development and governance, location of various urban utilities, the economic basis of cities, and the problems associated with growth.

Mr. Knos

Offered every year

057 CYCLES IN THE BIOSPHERE: INTRODUCTION TO ENVIRONMENTAL MANAGEMENT

This course is designed to explore some of the basic concepts and problems involved in the study of natural resources and environmental management. This is accomplished by examining the physical principles management practices, and environmental issues involved in three major cycles of the biosphere: the hydrolytic cycle, carbon cycle, and nuclear fuel cycle. Crosslisted with STS.

Mr. Kates, Ms. Johnson

Offered every year

098 READINGS IN GEOGRAPHY

The course offers directed readings for undergraduates in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

099 RESEARCH IN GEOGRAPHY

This course offers special research projects for undergraduates in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

108 WORLD POPULATION

Is the population of the world growing too fast? Will the world encounter an over-shoot leading to doomsday? To address these questions requires an understanding of the nature of population growth and socio-cultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed. Also listed for credit as International Development 108.

Mr. Turner

Offered every other year

110 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTRODUCTION

This course introduces students to the variety of quantitative techniques that are used in contemporary geographical analysis. Topics include the nature of geographic information systems, level of measurement, simple statistics, hypothesis testing, two sample tests, analysis of variance, correlation, and regression. Each technique will be introduced in lecture, and in the laboratory students will use a packaged software program to solve geographic problems. (No prerequisites).

Mr. Karaska

111 GEOMORPHOLOGY OF HUMID TROPICS

The humid tropics, home of the rainforest, is an area of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest is removed, great rivers in the tropics, the devastating impact of human intervention are among the topics to be explored.

Mr. Berry, Mr. Lewis

Offered every other year

114 DYNAMICS OF THE EARTH SURFACE

The earth moved! Continents move slowly across the face of the earth: soil, rock, and water move constantly downslope. Our landscape changes day by day. The course explores how and why and gives students a chance to measure and study the natural world indoors and out.

Mr. Lewis

Offered every year

122 THE ATMOSPHERE AND DYNAMIC CLIMATOLOGY

The introduction to climatology stresses the concepts and principles necessary in understanding the climatic system. These concepts are applied to various regional climatologies, climatic change, and current problems in atmospheric science (e.g., air pollution, city climates and weather modification). This is intended for the physical geography student and others wanting a complete background (for an introductory level) to physical climatology.

Ms. Nicholson

Offered every year

125 DEVELOPMENT PROBLEMS

Refer to course description under International Development. Also listed for credit as History.

Mr. Berry, Mr. Ford

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT

Do conventional explanations of underdevelopment strike you as false and unconvincing? A powerful and refreshing alternative perspective exists in Marxist and neo-Marxist theories of social change. This course reviews the main currents within this rich stream including theories of dependency, imperialism, accumulation world systems, unequal exchange, and mode of production. Marxist concepts will be used to examine the international role of capital, multinational corporations, and regional decline. Finally, the course presents alternative models of socialist development. Also listed for credit as International Development 127.

Mr. Peet, Ms. Johnson

Offered every year

129 LATIN AMERICA: ISSUES AND PROBLEMS

For the most part, North Americans take Latin America for granted. We stereotype its people and neglect to understand the root causes of their problems and aspirations. This course examines some of these problems: rural poverty, the extinction of Indian populations, the subordination of women, agricultural stagnation, and uncontrolled urban growth. In addition, it explores the aspirations embodied in popular mass insurrections ranging from the Mexican revolution to the current conflict in Central America. The course will draw upon geographical and sociological analyses, novels, poetry, films, and journalism. Also listed for credit as International Development 129.

Ms. Johnson

Offered every other year

135 CLIMATE AND THE NEXT CENTURY: PANIC OR PANACEA

Recent world-wide droughts, extraordinarily severe winters, the world energy crisis—these three current world problems have raised a two-fold issue concerning adaptation to climate. Many scientists feel we are facing the prospect of an irreversible climatic change, perhaps induced by man, and society must prepare to adjust. On the other hand, coming to terms with climate—constant or changing—can help us face other societal concerns. This course considers both, and includes a series of workshops which focus on such issues as climatic change, architecture and climate, alternative energy, air pollution, climate and urban design, environmental adaptation, desertification, weather modification, and climatic hazards. The course is appropriate for non-majors with no prerequisites. Cross listed with STS.

Ms. Nicholson

Offered every year

137 TIME AND SPACE IN OLD AND NEW ENGLAND

A course that uses cases from old and New England to demonstrate the skills, methods, and sources of cultural, historical, and humanistic geography in the towns and fields of New England and in texts of both Englands. Dating techniques; prehistoric chronology; estimating past populations; toponymy, linguistic and lexical evidence; archaeology and ground itself; archival and literary evidence; aerial photography; vernacular and high style architecture; analysis of art and literary texts. Limited priority given to geography majors in cultural "stream." (Geography 017, Introduction to Cultural Geography preferred.)

Mr. Bowden, Staff

Offered every other year

139 COUNTRY AND CULTURE

The landscape can be read! Be it a vast tropical rainforest with an occasional clearing or an intensively cultivated river valley in New Eng-

land, the rural landscape is the product of interaction between place (environment) and people (culture). This course traces the evolution of rural landscapes through time from early hunter/gatherers to modern suburban encroachment on rural areas. Emphasis is placed on ecological principles that help explain the techno-cultural modification of rural places.

Mr. Johnson, Mr. Turner

Offered every year

140 CITIES AND CULTURE

Studies of the ideal, symbolic, and actual forms of cities in the major civilizations and of the characteristic patterns of places within each. Contrast is made between the oriental and occidental, the cosmomagical and symmetrical, the traditional and modern, the preindustrial and industrial, the pre-capitalist and capitalist, the cities of orthogenesis and heterogenesis. Half of the course is devoted to the culture and cultural role of major American cities, including Boston, New York, Philadelphia, Los Angeles, San Francisco, New Orleans, Chicago, and Charleston.

Staff

Offered every year

141 RESEARCH METHODS IN GEOGRAPHY

This course focuses upon the ways in which social science research is conducted and emphasizes primarily applied research in a problem-solving context. Course will involve the students in the variety of problems, methodological strategies, and analytical techniques characteristic of current geographical research.

Ms. Hanson

Offered every year

155 RESOURCES OF CHINA

The resources, especially the renewable resources, of China: their extent, management in modern times and earlier, and their relationship to major issues of Chinese civilization.

Mr. Major

Offered every other year

158 AGRICULTURAL RESOURCE SYSTEMS

The course consists of the examination of agricultural systems, their processes, problems, and prospects; in part, the course focuses on issues of agricultural decision making, culture and agriculture, food production, distribution and hunger, technology and resource requirements, environmental impacts, and alternative agricultural futures. The course draws upon case studies in North America, Asia, and Latin America.

Ms. Johnson

Offered every other year

161 GEOGRAPHY OF AMERICAN INEQUALITY AND POVERTY

The theoretical framework for the course is an examination of alternative explanations for the basic causes of unemployment, inequality, poverty. Genetic, cultural, and systemic theories are outlined and critiqued. The geography of inequality is analyzed in the context of these theories. Rural poverty, rural-to-urban migration, urban ghetto formation, regional economic decline, and anti-poverty policy and planning are discussed.

Mr. Peet

Offered every year

165 SIMULATING THE CITY

Using census data and information from other sources, students learn how to represent and analyze the spatial organization of the city.

Mr. Knos

Offered every year

170 URBAN SOCIAL GEOGRAPHY: HOUSING, NEIGHBORHOOD, AND RESIDENTIAL MOBILITY

Course focuses on the definition and importance of social areas within cities, patterns and processes of residential segregation, the role of the neighborhood in urban life, and the functioning of the urban housing market. The course also examines urban planning approaches to solving housing and neighborhood problems.

Ms. Hanson

172 AMERICAN SPACE AND ITS EUROPEAN ROOTS

An examination of the European images of the known world at the time of the discovery of America, of how these early notions affected later thought about America in geography, literature, and the arts, and of the succession of American (and European) images of American space, to the present. Using literature, film, and other artistic forms, specific models are studied in a variety of contexts, e.g., the island, the city, the garden, the frontier, the general contrast between primitive and civilized spaces. A cluster in the Program of Humanistic Studies. The course is listed for credit as Geography, English, Comparative Literature (The Idea of America in Spanish-American Narrative), and Philosophy (Philosophy of Architecture: Europe and America).

Mr. Bowden

Offered every other year

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT

Ecology, ecumene, environment, exploration: these four themes are the intellectual legacy to modern geography of the ancient Greeks and other Mediterranean peoples. Such geographically-related topics as the voyage of Odysseus, the Atlantis myth, the concept of sacred space, the measurement of the earth, the relations of nature and culture, the design of the environment, the idea of the habitable world, the relations of climate and health, and the exploration of the "barbarian" world will be examined both in the accounts of ancient Greek and Roman writers (in translation) and in later scholarly elaborations. Open to all those interested in the continuing significance of the thought of the ancient Mediterranean world. Crosslisted with Classics.

Mr. Koelsch

Offered every other year

176 ENVIRONMENT/1982

An assessment of major environmental issues, both national and global in nature, confronting the United States in 1982. Particular attention will be given to problems requiring governmental action: acid rain, renewal of the clean air act, long-term energy planning, world water shortages. Intended for those desiring introductory or general knowledge.

Mr. Kasperson

Offered every year

177 CULTURAL ECOLOGY IN ARID LANDS

Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters and urban dwellers who are successful have coping strategies for dealing with drought, desertification and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands

in support of a growing population. Also listed for credit as International Development 175.

Mr. Johnson

Offered every other year

180 FIELD MAPPING

A basic introduction to the collection of field data for the making of maps. It covers the fundamentals of field survey, including basic instrumentation, and the assembly of both qualitative and quantitative material for practical cartography. Project work is involved.

Staff

Offered every year

181 INTRODUCTION TO CARTOGRAPHY

An introduction to the fundamentals of map logic and cartographic methods with an emphasis on the use of graphic products as basic geographic tools. The course will include a number of practical map-making exercises.

Mr. Steward

189 REMOTE SENSING OF THE ENVIRONMENT

This course offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. It covers the use of remotely sensed data, such as air photos and a variety of satellite imagery, to provide answers to many of the problems about our physical and human environment. Also listed for credit as International Development 189.

Mr. Steward

Offered every year

196 CULTURE AND SPORT

Parallel and overlapping seminars in cultural geography, economics, and psychology. Common readings in humanities "texts," group meetings focused on film, and frameworks from the social sciences will be used to explore a number of American games/sports (and their European progenitors) as expressions of American history, character values, environment, self-image, mentality, economic ethos, and institutions. A cluster in the Program of Humanistic Studies. Themes are: (1) the relation between the character and structure of the games and their success among different groups of Americans; (2) the timing of adoption of the games; (3) explanations for the transformation of the games from European and early forms; (4) economic forces influencing the structure of spectator and participatory sports; (5) deviation of professional and amateur variants; (6) scale and nature of sport as a business. Athletics, boxing, cricket, baseball, soccer, rugby, football, basketball, hockey, and tennis, among others, will be considered. Classes meet twice weekly in separate groups for the regularly scheduled class period. The class period will be extended for joint meetings in alternate weeks for special events (e.g., films). Short written papers, marked by all three professors, and class participation will be the basis for grades. The course is listed for credit as Geography (Culture and Sport), Economics (Economics and American Sport), and Psychology (Psychology and American Sport).

Mr. Bowden

Offered every other year

202 ADVANCED TOPICS IN CLIMATOLOGY

This course examines a number of special topics in climatology. The focus depends on the interests of students enrolled, but topics are

chosen from the areas of microclimatology, meso-scale meteorology, urban climates and air pollution, climatic change, climatic statistics, historical and paleo-climatology, and climatic teleconnections. This is a prerequisite for the urban climates seminar in geography.
Ms. Nicholson

Offered every other year

205.2 EDUCATION AND GEOGRAPHY INTERNSHIP SEMINAR

This seminar serves to help student teachers deal with specific kinds of problems which they face in the classroom. Experiences are shared and discussed. The seminar is designed to help student teachers develop their own classroom curriculum and teaching techniques. Also listed for credit as Education.

Mr. Knos

Not offered on a regular basis

206 AUTOBIOGRAPHY WORKSHOP

The course offers a consideration of how students have learned in their own lives as a prerequisite to helping others to learn. The course seeks to engender an appreciation of both uniqueness and generalization in the process of teaching any social science discipline. Also listed for credit as Education.

Mr. Knos

Offered every year

208 ENVIRONMENTAL COGNITION AND BEHAVIOR

The course will review the theories, methods, and research findings in the field of environmental perception. Particular attention will be given to the development of spatial cognition and to cross-cultural studies in cognition. Also listed for credit as International Development.

Ms. Johnson

Not offered on a regular basis

209 SIMULATION AS A LEARNING DEVICE

This course is designed to provide experience in the development of simulations to illustrate a variety of geographic concepts. Concepts are defined; illustrations in the real world are formulated; simulations of these situations are developed. Also listed for credit as Education.

Mr. Knos

Offered every year

210 SOCIO-ENVIRONMENTAL IMPACT ANALYSIS

The aim of the course is to provide an overview of the theories, methods, and models used in assessing the social repercussions of planned development. A case study approach covers both domestic and foreign projects. These are analyzed in terms of the available institutional planning tools such as social impact statements, as well as the critical literature on the subject. The goal is to equip the student with both analytical skills and a critical perspective necessary to evaluate the social aspects of development. The course is oriented toward majors in International Development and Environmental Affairs. Instructor's permission is required for nonmajors. Also listed for credit as Environmental Affairs.

Ms. Johnson

Offered every other year

213 HOW PEOPLE AFFECT THE PHYSICAL WORLD: A "PROBLEMS COURSE"

Many soil, water, and vegetation systems around the world are well managed for human well being. Others are not. To manage the physical

world well is increasingly necessary. The course explores the physical aspects of people's use and misuse of the world we live in.

Mr. Berry, Mr. Lewis

Offered every year

214 SEMINAR IN RIVER BASIN PLANNING

This course will concentrate on one river basin and the studies made and plans prepared to develop this river basin. Students will work independently on specific sections of the case under consideration. Seminar sessions will give participants the opportunity to present their independent work and discuss it in a broader context. Readings, discussions and research will focus on objectives, techniques, and results and relate them to the appropriate economic and social values. Also listed for credit as Environmental Affairs.

Mr. Schwarz, Mr. Major

Not offered on a regular basis

215 FLUVIAL PROCESSES IN GEOMORPHOLOGY

The focus will be on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion, and deposition will be explored.

Mr. Lewis, Staff

Offered every other year

216 GEOMORPHOLOGY AND CLIMATOLOGY OF ARID LANDS

An analysis of the landscapes of arid areas of the Earth and the dynamics under which they operate with special relation to the arid southwest section of the United States and the Sahara. Also listed for credit as International Development 216.

Mr. Lewis, Ms. Nicholson

Offered every other year

217 HISTORY OF CARTOGRAPHY

A basic survey of the history of mapping up until about 1900. Topics will include the methodological basis of investigations into the subject, maps of primitive peoples, the classical, medieval and Renaissance periods, the rise of national surveys, the relationship of mapping to exploration, and the cartography of North America.

Mr. Steward

Offered every other year

218 SEMINAR IN PHYSICAL ENVIRONMENT AND DEVELOPMENT

The world is changing more rapidly than at any time in history. The course reviews the patterns of change in the Third World; examines the role of environment and resource management in development; and allows students to develop their own in-depth case studies. Also listed for credit as International Development 218.

Mr. Berry, Mr. Lewis

Offered every other year

220 AGRICULTURE AND GRAZING: A PHYSICAL PERSPECTIVE

Agricultural and grazing practices with their relations to the environment are examined. Various physical and cultural/economic situations including the developed and developing world are the focus for the inquiry. Also listed for credit as International Development.

Mr. Lewis

Not offered on a regular basis

221 APPLIED SURFACE WATER HYDROLOGY

Refer to course description under Environmental Affairs.

Mr. Schwarz

222 DYNAMICS OF CITY GROWTH

This is an historical survey of the internal structure and external relations of urban areas. Stress falls on North American cities through the nineteenth century, with reference to European antecedents. Critical discussion of relevant theories and models of city growth is included.
Staff Offered every other year

223 HUMAN ACTIVITY AND GEOMORPHOLOGY

The role of man as the principal geomorphic agent in both urban and rural environments is emphasized. The problem of integrating economic activity within the constraints of the physical environment to minimize negative geomorphic responses will be explored.
Mr. Berry, Mr. Lewis Offered every other year

224 MAPPING FOR INTERNATIONAL DEVELOPMENT

This course seeks to set the current state-of-the-art/future potential of mapping techniques and technology in an international development context. It is planned to augment the lectures and project work with field trips to the cartographic sections of relevant agencies, e.g., United Nations, World Bank, Organization of American States, etc. Also listed for credit as International Development.
Mr. Steward Offered every year

225 NUCLEAR POWER AS A SOCIAL ISSUE

An exploration of the social issues in the use of nuclear power in the U.S. and abroad: accidents (such as Three Mile Island), radioactive waste management, nuclear proliferation, civil liberties issues, role of public participation, adequacy of institutions. Particular attention is given to the interplay between technical choices and social impacts. Guest speakers. Permission of the instructor required. Crosslisted with Science, Technology and Society.
Mr. Kasperson Offered every other year

226 HOW SAFE IS SAFE ENOUGH?: RISK ASSESSMENT AND HAZARD MANAGEMENT

For advanced students, this is an introduction to the theory and methods of risk assessment and hazard management of technological hazards. Case study material is drawn from concurrent research including hazards of consumer products, energy production, toxic chemicals, and transportation. Also listed for credit as Environmental Affairs and Science, Technology and Society.
Mr. Kates Offered every other year

230 PASTORALISM IN TRADITIONAL ECONOMIES

"... And Abel was a keeper of sheep, but Cain was a tiller of the ground." (Gen. 4:2). From sacred scripture to more recent images, the people who herd animals for a living have elicited ambivalent reactions, both hostile and romantic, from their sedentary cousins. Close examination of these images exposes the myth and reality of pastoral nomadism in the dry environments of the subtropics and middle latitudes. The history and ecology of pastoralism is investigated through a series of contemporary case studies, and the future of this traditional mode of production in an epoch of development, modernization, and environmental change is analyzed. Also listed for credit as International Development 230.
Mr. Johnson Offered every other year

231 SEMINAR: POLITICS AND THE ENVIRONMENT

This seminar is intended for the student with professional career or advanced study objectives. The seminar is organized about current selected policy issues or environmental controversies. Each of these is treated in a two-week period which includes a state-of-the-art assessment, case applications, and a short student position paper on an assigned question. Representative issues have included the environmental movement, models of the policy process mediating environmental conflict, risk, and the media. Permission of instructor required. Also listed for credit as Environmental Affairs and Government.

Mr. Kasperson

Offered every other year

233 PLANNING FOR URBAN PUBLIC SERVICES

With a focus on the North American city, this course analyzes current patterns and problems in the distribution of public services to local citizenry. The course explores the approaches open to planners in locating public facilities.

Ms. Hanson

Not offered on a regular basis

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT

Based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health, this course takes a synoptic view of concepts and practices concerning health and disease as a form of environmental cognition and management. Discussion topics range from the changing disease environments of early New World migrants and inhabitants to present-day concerns over environmental health hazards, but we will emphasize our societal interactions with urban-industrial disease environments in the last hundred years. Crosslisted with Environmental Affairs and History.

Mr. Koelsch

Offered every other year

235 GEOGRAPHY OF THE CAPITALIST WORLD SYSTEM

Review of world systems theories, crucial phases in the development of the capitalist world system, history of center-periphery relations, underdevelopment, multinational corporations and the new international division of labor, the geography of consciousness and spread of American culture. The course will emphasize a particular geographic problem of current interest each time it is offered.

Mr. Peet

Offered every other year

238 MANAGING THE COASTAL ENVIRONMENT

Refer to course description under Science, Technology and Society. Also listed for credit as Environmental Affairs.

Mr. Ducsik

240 THE END OF AMERICA: LOS ANGELES

The modern city reflects the values and forces which have shaped Western culture in its westward course. In the last century the history of Los Angeles—the western end of American space—embodies better than that of any other city the polemic between traditional and technological notions of the modern city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit, perhaps even of the end of that spirit. This cluster course is designed to explore the changing notions of the city and the American attitude

toward the culture of cities through close examination of the history, geography, literature, and film associated with Los Angeles. A cluster in the Program of Humanistic Studies. Common sessions will be conducted on Thursday afternoons (3–5 p.m.). Students interested in participating in the cluster should enroll in one of the three courses that constitute the cluster which is listed as Geography, Comparative Literature, and English.

Mr. Bowden

Offered every other year

243 ECOLOGY, CULTURE AND THE CITY

An examination, from the perspective of cultural ecology, of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts will include primitive, traditional, and modern worlds; stages of economic growth, interaction, and integration; core and periphery; zonation; gradient ecosystem; rural-urban continuum; and city and country. A capstone cluster in the Program of Humanistic Studies, and a "problems" course in cultural geography.

Mr. Turner

Offered every year

245 CITY, SPACE AND SOCIETY

An examination, from the perspective of social urban geography, of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts will include primitive, traditional, and modern worlds; stages of economic growth, interaction, and integration; core and periphery; zonation; gradient ecosystem; rural-urban continuum; and city and country. A capstone cluster seminar in the Program of Humanistic Studies, and the "problems" course in urban geography.

Ms. Hanson

Offered every year

247 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTERMEDIATE

This course focuses on the following topics: multiple correlation and regression (including the analysis of residuals); analysis of covariance, dummy variables, and other applications of the linear model; multivariate extensions of analysis of variance. In the labs associated with this course, students work with the BMDP and SPSS software packages and are introduced to computer programming. Prerequisite: Geography 110.

Staff

Offered every year

248 HAZARDS OF THE WORKPLACE

The course surveys the trends and extent of occupational hazards in the United States and inquires into the adequacy of current public policy and managerial efforts. Attention is given to the value issues involved in alternative approaches to worker protection. Also listed for credit as Science, Technology and Society.

Mr. Kasperson

Offered every other year

249 CITY, SPACE AND CULTURE

An examination from the perspective of cultural urban geography of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts will include primitive, traditional and modern worlds; stages of economic growth, interaction, and integration; core and periphery; zonation; gradient ecosystem; rural-urban contin-

uum; and city and country. A capstone cluster in the Program of Humanistic Studies and a "problems" course in cultural geography.

Mr. Bowden

Offered every year

250 HISTORICAL GEOGRAPHY OF THE EASTERN UNITED STATES

This course surveys the evolution of the continental United States east of the Mississippi River from the Age of Discovery until about 1900. Elements of cultural, economic, social, and political geography are integrated into a comprehensive historical framework. Appraisals of American society and culture, and of regional and national character, are evaluated against that background.

Staff

Offered every other year

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT

An inquiry into current issues of scholarly debate in the field of environmental management. An advanced undergraduate seminar intended to provide an integration of skills and concepts in environmental geography through the examination of concrete management problems. Also listed for credit as Environmental Affairs and International Development.

Mr. Kasperson, Staff

Offered every year

253 NEW ENGLAND LANDSCAPE

The mountains, rivers, fields, villages, and cities of New England bear the unmistakable imprint of a succession of peoples: Indians, Puritans, Yankees, new immigrants, and technocrats. Using field trips and library sources each layer of occupation will be removed and the characteristic features, artifacts, settlement patterns, and complexes representative of each era exposed. Emphasis is on the representative and the vernacular, and on rhythm, texture, symbol, and metaphor embedded in characteristic places rather than on the unique element.

Staff

Offered every other year

254 URBAN TRANSPORTATION: PROBLEMS AND PROSPECTS

What are the dimensions of urban transportation problems, how might they be understood, how might they be ameliorated? Topics include transportation and land use, transportation and energy, the car vs. transit, and transportation and equity issues. We examine aggregate and disaggregate approaches to analyzing patterns of spatial behavior and evaluate the relative effectiveness of these approaches in posing solutions to urban transportation problems.

Ms. Hanson

Offered every year

255 IMAGES OF THE AMERICAN WEST: HISTORICAL GEOSOPHY

Americans from the first made the West what they wanted it to be: Garden of the World, Eldorado, Cibola, Passage to India, Great American Desert, Great Prairie, Garden in the Grassland. A westering people invested this land with heroes, hunters, horse-riding Indians, trappers, scouts, cowboys, oil-magnates, land boomers, and movie tycoons. The West presents a kaleidoscope of images of both outsiders and insiders, and this course considers the origins and changes in these images, their effects on behavior, and their imprint of the land. Emphasis throughout is on the methods and skills of those concerned with reconstructing the geographical knowledge (geosophy) of people of different backgrounds, roles, regions, and times.

Mr. Bowden

Offered every other year

256 PROBLEMS IN WATER RESOURCES PLANNING

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: A 200-level course in Environmental Assessment, Physical Geography, Economics, or Science, Technology and Society, or permission of instructor. Also offered for credit as Environmental Affairs and International Development.

Mr. Schwarz

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION

Introduction to the theory of multiobjective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications. Also listed for credit as Environmental Affairs and International Development.

Mr. Major

Offered every year

258 CENTRAL AMERICA: LANDSCAPE EXPERIENCE AND CHANGE

This region is examined in context with the various cultures that have made imprints on its landscapes. The shared and particular values and technologies of Amerind, European, African, and Latino are traced from the rise of early civilization in the region to modern times. Emphasis is placed on landscape utilization and modification as expressions of each culture's experience. Also listed for credit as International Development.

Mr. Turner

Not offered on a regular basis

260 SEMINAR IN ATMOSPHERIC SCIENCE AND URBAN CLIMATOLOGY

This course deals with the effect of cities on the climatic environment. Topics include air pollution, urban effects on weather variables (e.g., the "heat island" and rainfall), urban design as related to climate, and climatic modeling. Crosslisted with Science, Technology and Society and Physics.

Ms. Nicholson

Offered every other year

261 URBAN ECONOMIC GEOGRAPHY

Focus is on the system of cities, the dynamics of interurban and interregional space economies, and the role of cities in regional development. Course also focuses on changing patterns of urban land use, theories of urban land use, and data requirements and methods for handling problems in urban land use planning.

Mr. Karaska

Offered every year

264 REGIONAL ECONOMIC AND SOCIAL DEVELOPMENT

Regional development and underdevelopment theories are applied to the advanced capitalist countries. The course focuses on such issues as Frostbelt-Sunbelt competition, the underdevelopment and restructuring of old industrial regions, economic and social change in the New England region, and the role of the state in the process of regional

economic development. Case studies of industrial decline—the automobile and steel industries—and industrial growth—high-technology industries—are presented.

Mr. Peet

Offered every other year

273 SEMINAR IN URBAN GEOGRAPHY

Through readings and discussion, this seminar focuses on major research problems in urban geography. Each student formulates a research problem, and designs and executes a research project.

Prerequisites: Geography 141 and 110.

Ms. Hanson

Offered every year

275 CITIZEN PARTICIPATION: THEORY AND APPLICATION

Erosion of public confidence in the institutions and professionals charged with managing societal affairs has brought proposals that decision-making be conducted more openly and with full opportunity for citizen participation. This course explores a range of issues surrounding this concept, with particular reference to situations involving its application in planning contexts. Major theories regarding the nature and forms of participation are examined and contemporary experience with participatory programs is reviewed. Also listed for credit as Environmental Affairs and Science, Technology and Society.

Mr. Kasperson

Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS

About no region of the earth are there such misconceived mystiques as the humid tropics. Mid-latitude biases have led to incorrect assessments of the composition of these wet, hot lands, of traditional uses of them, and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region. Also listed for credit as International Development 276.

Mr. Turner

Offered every other year

279 AMERICAN LANDSCAPE

Every landscape contains a record of the history, ecology, values, and images of the culture(s) that produced it. Those messages are waiting to be read and interpreted by the informed observer. The American landscape encapsulates the American encounter with environment, the emergence of distinctive settlement and livelihood patterns, the dynamic tension between regional and national landscapes, and changing cultural attitudes toward the use and abuse of American space. An interdisciplinary approach featuring geographic, historical, literary, and artistic sources broadens this analysis of the contemporary landscape. A program of Humanistic Studies course clustered with English and Art. Field trips required.

Mr. Johnson

Offered every other year

281 PLANNING INTERNSHIP AND INTERNSHIP SEMINAR

This is an individual internship with a public or private agency involved in planning, offered in conjunction with a seminar. The internship will be under the supervision of a faculty member in the planning cluster or a related area. The seminar is designed to help the student understand and strengthen his/her internship experience and is attended by

various faculty in the planning cluster, as well as others with relevant internship experience.

Mr. Knos

Offered every other year

284 LANDSCAPES OF THE MIDDLE EAST

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Also listed for credit as International Development.

Mr. Johnson

Offered every other year

289 PROBLEMS IN POLITICAL ECONOMY OF DEVELOPMENT

This course will examine the current "state of the art" and debates surrounding differing theories of underdevelopment and their implications for international and regional development. Also listed for credit as International Development.

Ms. Johnson

Offered every year

292 CARTOGRAPHIC DESIGN AND PRODUCTION

A course in the detailed preparation of cartographic artwork for map production. It covers a range of work in basic compilation, drafting, and photographic work.

Staff

Offered every year

294 SEMINAR IN CARTOGRAPHY

An examination of perennial and new problems in cartography ranging from considerations of a philosophical and historical nature to the concerns of contemporary mapping.

Mr. Steward

Offered every year

296 ADVANCED REMOTE SENSING

A more detailed consideration of the use of remote sensing instrumentation for presenting and analyzing data about the earth's surface. It includes both manual and computer analysis of photographic and satellite imagery.

Staff

Offered every year

298 INTRODUCTION TO AUTOMATED CARTOGRAPHY

A "hands-on" introduction to the fundamentals of computer graphics and other applications in computer-assisted cartography. The course covers programming logic, the production of thematic and general geographic maps, and the broad nature of geographic information systems.

Staff

Offered every year

299 AGRICULTURE IN TRADITIONAL ECONOMIES

Subsistence, transitional, and smallholder agriculturalists are the focus of investigation. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on the theories of their change.

Mr. Turner

Offered every other year

299.9 INTERNSHIPS IN GEOGRAPHY

The course consists of faculty-supervised internships to assist students in integrating academic theory with practical experience. Students are

able to do extended research in a specific area of interest. Prerequisite: permission of instructor. Offered for variable credit.

Staff Offered every semester

300 READINGS IN GEOGRAPHY

Students participate in directed readings for graduate students in an area of their choice. Prerequisite: permission of instructor. Offered for variable credit.

Staff Offered every semester

301 RESEARCH IN GEOGRAPHY

These are research projects for graduate students leading, usually, to the dissertation proposal. Prerequisite: permission of instructor. Offered for variable credit.

Staff Offered every semester

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY

The seminar is designed for thesis- and dissertation-level students working in the areas of resources, development, and environmental cognition, who are developing proposals or pre-proposal research papers. The seminar provides a forum for discussion, criticism, and practical advice. Also listed for credit as International Development.

Ms. Johnson Offered every other year

312 SEMINAR: AGRICULTURE AND DEVELOPMENT

The course is a reading/seminar on major interdisciplinary themes dealing with various aspects of agricultural growth and development among traditional farmers and Third World countries. Issues of study include growth vs. development, transitional farming behavior, constraints to production, and so forth.

Mr. Turner Offered every other year

316 SEMINAR IN GEOMORPHOLOGY

The seminar explores patterns of thought in modern geomorphology focusing particularly on fluvial and mass wasting processes acting directly on hill slopes.

Mr. Berry, Mr. Lewis Offered every other year

320 SEMINAR IN SYSTEMS AND NORMATIVE SCIENCE

The structure of explanations in normative (hypo-deductive) science is examined as the rudiments of more elaborate systems, teleological systems, and functional systems explanations. The structure of each system explanation is critiqued. Attempts to provide such explanatory forms in geography and related disciplines are examined.

Mr. Turner Offered every other year

330 SEMINAR IN CULTURAL ECOLOGY

The "ecological transition," the increasing incorporation of nature into human culture, is the point of departure for an examination of the theory, method, and policy relevance of cultural ecology.

Mr. Johnson Offered every other year

333 TEACHING FIELD STUDIES OF ENVIRONMENTAL ISSUES

This is a parallel course to Geography 013, for Environmental Affairs and Geography seniors or graduate students interested in small group

leadership and investigative projects. Enrollment is limited and requires advance consultation with instructor during fall semester.

Mr. Kates

Offered every other year

340 ECOLOGY AND PREHISTORY

This course examines the growth and development of early culture from an interdisciplinary perspective. Emphasis is placed on the various stress or pressure theories of cultural development. Works in archaeology, anthropology, history, and geography are addressed.

Mr. Turner

Not offered on a regular basis

345 CREATIVITY AND PLACE

The milestones of human learning have been set here and there at opportune times by a few exceptional groups in exceptional locations for discovery and transmission of ideas (C.O. Sauer). This seminar focuses on centers of cultural creativity selected each year by participants. Questions focus on the forces and circumstances favoring creativity, the settings of region and place, on wealth, rise and fall, growth, migration and interaction, on the nature of cultural production, and, above all, on the consequences of cultural creativity for place and space, region and landscape.

Staff

Offered every year

347 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: ADVANCED

Topics taken up in this course include principal components and factor analysis, canonical correlation, classification and grouping routines, discriminant analysis, and geographic information systems. Labs will use BMDP, SPSS, and other software packages and FORTRAN. Prerequisite: Geography 247.

Staff

Offered every year

348 RESEARCH IN ENVIRONMENTAL HAZARDS

Advanced research in the theory of environmental hazards with reference to management and decision making.

Mr. Kasperson

Not offered on a regular basis

350 NATURE, SOCIETY AND TECHNOLOGY: THEORY OF HUMAN ENVIRONMENT

Having spent the fall reading, thinking, and writing about the topic, I'll share with the class what I think I learned.

Mr. Kates

Offered every other year

358 PROFESSIONAL SEMINAR IN RESOURCE PROJECT EVALUATION

This seminar covers best-practice applied methods of resource project evaluation as suggested by current research, the procedures of the World Bank, and leading U.S. resource agencies. The intent of the seminar is to bring advanced students to a level of preparation adequate for professional work in resource project evaluation. Prerequisite: Geography 257 or equivalent. Crosslisted with International Development and Environmental Affairs.

Mr. Major

Offered every year

365 SEMINAR IN SOCIAL AND ECONOMIC GEOGRAPHY

Theories of regional development and underdevelopment, industrial restructuring, and the role of the state are examined at an advanced level. A background in Marxist underdevelopment theory is required.
Mr. Peet

Offered every other year

366 SEMINAR IN COLLEGE CURRICULUM DESIGN

Students study the development of curriculum with supporting materials oriented toward college undergraduates. Learning in a problem context is stressed. Also listed for credit as Education.
Mr. Knos

Not offered on a regular basis

367 IDEAS OF CULTURE

The quest of cultural geography is to bring the ideas of culture embedded in the humanities and the sciences to an understanding of geography's traditional concerns—place and space, ecology and landscape. Culture is defined as the ideal (a state or habit of mind), the documentary (the body of intellectual and moral activities), and the social (a whole way of life which expresses certain meanings and values not only in art and learning but also in institutions and social behavior). (Raymond Williams) This course examines the meanings of culture in geography, the relations between culture and humanism, society and economy, and the historical and philosophical underpinnings of the concept.

Staff

Offered every other year

368 COLLOQUIUM: THE DEVELOPMENT OF GEOGRAPHIC THOUGHT

After a brief survey of Western geography from Classical times, the colloquium examines the principal paradigms, themes, and debates within the discipline in the twentieth century and the professional structure of the field as it exists in research, educational, and applied contexts. Designed primarily for graduate students in geography wishing a general overview of their intended profession. Well-qualified undergraduates may be admitted by permission.

Mr. Koelsch

Offered every year

German

See Department of Foreign Languages and Literatures.

Government and International Relations

DEPARTMENT FACULTY

John C. Blydenburgh, Ph.D., Professor of Government, Department Chair

Morris H. Cohen, Ph.D., Professor of Government, Representative of Washington Semester Program

Cynthia H. Enloe, Ph.D., Professor of Government

Roger E. Kasperson, Ph.D., Professor of Government and Geography
Sherman S. Hayden, Ph.D., Professor of International Relations, Emeritus

Ronald P. Formisano, Ph.D., Associate Professor of American History
and Adjunct Associate Professor of Government

Sharon P. Krefetz, Ph.D., Associate Professor of Government

Knud Rasmussen, Ph.D., Associate Professor of Government

Ann T. Schulz, Ph.D., Research Associate Professor of Government

Zenovia A. Sochor, Ph.D., Assistant Professor of Government

Barbara P. Thomas, Ph.D., Assistant Professor, Program for International Development and Adjunct Assistant Professor of Government

Kent C. Trachte, Ph.D., Assistant Professor of Government

Roberta R. Schaefer, Ph.D., Visiting Assistant Professor of Government
(1982–83)

Charles N. Coleman, M.A., Visiting Lecturer of Public Administration

UNDERGRADUATE PROGRAM

The basic premise of the program in the Department of Government and International Relations is that the knowledge that is the product of political research is not different fundamentally from the knowledge that is useful to a political actor. The implication of this point for our program is that the same curriculum that effectively trains potential political actors, be they citizens or public servants, can prepare a person for a career as a scholar.

The identity of political science as a discipline, like most of the social sciences, suffers because there is no “nonacademic” profession associated with it. If there were, the problem of setting up program criteria would be trivial. We have no illusions about remedying this deficiency with a program designed to train professional politicians or government workers. Nevertheless, we sincerely hope that some of our students will go on to careers in the municipal, state, and federal government, and, of course, the many public careers outside government—journalism, law, public interest organizations, business, and education.

The aim of the department, therefore, is to train all students who come in contact with us to be more competent political actors—at whatever level they choose—than they would have been had they not come in contact with us. For the government major, we have the additional aim that he or she should be able to acquire from us knowledge that would complement a career in the practice or the study of public affairs.

The focus of politics is the future—what the state will be and what it should be. These, too, are the central problems of political science: the development of predictive theory based on a clear conception of the present, and the establishment of a critical perspective from which to evaluate and explore normative political theory. Therefore, we see three components, three types of political education, that make up an effective political science curriculum: (1) a description of the present, (2) the concepts and skills useful for constructing predictive theory, (3) the intellectual skills necessary for critically evaluating normative theory.

Descriptive Component

First, an effective political science curriculum should provide useful information about politics and government; students exposed to the curriculum should have a knowledge of political and governmental institutions, their operations, their interrelationships, and their role in

political systems. The curriculum includes the provision of skills useful in measuring and analyzing information about politics and government. In short, the curriculum should provide an accurate description of the politics and government that students are likely to encounter in their lives after Clark.

Predictive Component

Information about politics and government is not sufficient for understanding. To understand means, at least in part, to have prudent expectations about the future: the effective political actor must be able to make useful predictions. Thus, we aim to provide models and theories with which students can use present information to make inferences about the future.

Normative Component

Although political argument is prompted by uncertainty, it is needed to solve ideological differences. Thus, the third component of an effective curriculum is the development of analytic skills useful for evaluating normative judgments about politics and government. The successful political actor, as citizen or professional, is constantly exposed to arguments about how the state ought to be. The critical thinker—the competent analyst of normative political argument—will be among the most effective participants in an open society.

The Government Major

The structure of the major is meant to accomplish these three goals while providing for the nonmajor as a byproduct. The major consists of program requirements and a subfield specialization in which the major chooses to explore a narrower field in greater depth. In a costless world it would be difficult to choose an ideal set of subfields. Our position is that the subfields we offer should be those in which we feel competent; thus, until and unless resources change, we will regularly offer four: American politics, comparative politics, international relations, and public policy and administration. While we will not foreclose other options, a major normally is expected to choose from among these four. Exceptional students have the additional option of participating in the departmental senior thesis program in the senior year.

Program Requirements

The major is required to take a total of nine government courses, three subfield related courses, and Economics 10. The major's government courses must include two of the following: Introduction to American Government, Introduction to Comparative Politics, Introduction to Public Administration, or Introduction to International Relations.

A current list of subfield related courses is published in the Government Department Handbook.

The relationship between politics and economics and between the respective disciplines is so fundamental that all majors are required to take Economics 10.

The remaining program course requirements are two: (1) one course in normative political theory and, (2) one course in research skills applicable to the major's subfield. The normative theory requirement can be satisfied with any of the theory courses offered in the Department of Government and International Relations, though ordinarily most students are expected to meet the requirement with 205 or 206. The

research skills requirement can be met with 107 (Research Methods in Politics) or with an appropriate course from another discipline.

Subfield Specialization

The major must take two subfield introductory course, three additional government courses in one subfield, and three related courses from other disciplines. Three government courses must be selected from outside the subfield. (Lists of related courses for each subfield are available in the Department of Government and International Relations Office.) Each of these three major disciplinary subfields are, themselves, open to a variety of topical emphases, thus allowing flexibility for undergraduate course selection.

In sum, the major requirements are:

- a) two of the following: Introduction to American Government, Introduction to Comparative Politics, Introduction to Public Administration, Introduction to International Relations
- b) Economics 10
- c) one research methods course
- d) one normative political theory course
- e) A subfield specialization including an introductory course and two other courses
- f) three subfield related courses
- g) three government courses not in the subfield

SENIOR THESIS PROGRAM

The Senior Thesis Program is intended to give the exceptional senior an opportunity to pursue an intensive course of study of her/his own choosing under the direction of a member of the Government Department faculty. The program culminates in a thesis completed during the last term of the senior year. The program normally consists of one credit per term beginning the first term of the senior year.

The thesis must be in completed form two weeks prior to the final semester of the program.

Any government major with a grade point average of 3.2 or better who is interested in pursuing an intensive course of study in a particular area is eligible to participate in the Senior Thesis Program. In special cases students with a GPA of 3.0 or better can qualify with provisional status. Provisional status means that the student begins an independent study project, which is then reviewed by the department faculty after one semester when a final decision on admission is made.

Applications should be submitted to the chairman of the Government Department before the completion of the term preceding the semester in which the applicant wishes to begin a program.

A complete application consists of a one- or two-page typed proposal describing the student's project and course of study and a transcript of the applicant's academic record. Proposals are expected to be substantial, containing a fairly specific statement of hypotheses or theories to be tested, questions to be explored, and the method and research to be used in the program.

All applications are reviewed at a meeting of the faculty of the Government Department. Applicants are evaluated as to their ability to work independently, intellectual ability, the appropriateness of their acquired skills, and other factors that indicate the likelihood that the applicant can successfully complete the program. Each applicant will receive notification of the department's decision on his or her case.

Review or appeal of the decision can be made through the department chairman.

HONORS IN GOVERNMENT

Honors in the government major can be achieved only through the successful completion of a senior thesis. Majors who have maintained at least a 3.2 average in government major courses (government courses + subfield related courses) are eligible for admission to the Honors/Senior Thesis program. Others can be admitted only through a special petition process. However, admission to the Honors/Senior Thesis program does not guarantee the awarding of honors. Students must pass a number of requirements in order to achieve honors. These include:

- (1) submission of a research proposal at the end of the spring semester of the junior year,
- (2) presentation of a well-developed research design at the end of the fall semester of the senior year,
- (3) completion of the thesis, and
- (4) review by a committee and an oral defense.

A student must complete each of these requirements successfully in order to attain honors; otherwise the student will be required to withdraw from the program. In case of the latter, the student will still be eligible for credit either for a semester of Special Projects or for a senior thesis without honors, depending on the level of progress. There are also certain junctures at which the student can elect to withdraw from the program.

The Honors/Senior Thesis program is supervised by the Honors Committee. This committee is composed of three members of the Government Department faculty—at least one of which must be a senior member of the department.

STUDENT HANDBOOK

The Government Department annually publishes a handbook, which has a more extensive description of programs, courses, and faculty, as well as other information relevant to the major or interested student. Copies are available in the Academic Center, Room 302.

PROGRAM AND GENERAL COURSES

77 INTERNSHIP

Offered for variable credit.

Staff

88 DIRECTED READINGS

Offered for variable credit.

Staff

89 SPECIAL PROJECTS

Offered for variable credit.

Staff

107 RESEARCH METHODS IN POLITICS

Students are exposed to some of the basic tools useful for analyzing and creating data in political research. Included are some elementary nonparametric statistics, hypothesis testing, and measurement theory.

Mr. Blydenburgh

Offered every year

202 APPLICATIONS OF GAME THEORY

Game theory was invented by John Von Neuman in the 1920s as a language and a logic for analyzing human conflict. It purports to be useful (and your professor believes it is) to systematically identify the best strategies for resolving many types of conflicts. Emphasis in this course is on understanding and applying the language and the logic. But a substantial amount of the course will deal with applications and illustrations, for example, to international relations, nuclear confrontation, political campaigning, and a host of other real-life situations. Emphasis is on "two-person" models with a selective review of "n-person" models. You will learn how to use bargaining, threats, commitments, mediators, ignorance, and power in resolving conflicts.

Mr. Blydenburgh

Offered every other year

205 ROOTS OF POLITICAL THOUGHT

A study of the development of Western political thought from the Socratic philosophies to Hobbes. The study deals with the evolution of political thought in the context of influential, social, political, and economic forces.

Mr. Rasmussen

Offered every year

206 RECENT POLITICAL THEORY

A study of modern political theory as developed in the context of the social, political, and economic forces that have shaped Western thought since the French Revolution.

Mr. Rasmussen

Offered every year

290 PUBLIC OPINION POLLING AND SURVEY RESEARCH

An introduction to the study of public opinion polling and survey research. Content includes both theoretical and practical aspects of survey research methodology, each of which are analyzed from a critical perspective.

Staff

Offered every other year

295 WRITING FOR UPPER DIVISION STUDENTS IN HISTORY AND THE SOCIAL SCIENCES

Refer to course description under History 295.

Mr. Von Laue

297 SENIOR THESIS IN GOVERNMENT AND INTERNATIONAL RELATIONS

Offered for variable credit.

Staff

INTERNATIONAL RELATIONS COURSES

(Also, see section on International Relations.)

169 INTRODUCTION TO INTERNATIONAL RELATIONS

This course is designed to equip the student with the analytic and conceptual tools to make sense out of the many complexities of international politics. We begin from the prevailing state-centric view of the discipline organized around the concepts of nation-state, sovereignty, power, perception, system, deterrence, verbal strategy, and reciprocity. Next, we explore challenges to this approach including liberal neoclassical political economy, transnationalism, structuralism and the Marxist

theory of imperialism. These afford us the opportunity to explore transnational corporations, the united nation system, international monetary, trade, and financial structures and institutions, and class conflict. We conclude with a consideration of the concept of global community.

Mr. Trachte Offered every year

210 INTERNATIONAL ORGANIZATIONS IN WORLD POLITICS

Thirty years ago international organizations such as the United Nations expressed the hopes of human society for a more peaceful world order. These utopian hopes were soon disappointed and interest in such organizations waned. More recently the perception of interpenetration of national economies; the recognition that energy, environmental, and disarmament issues among others are global problems; and the development of a Third World alliance have regenerated interest in international organizations. This course surveys functionalism, neo-functionalism, and supranationalism as explanations of the emergence of such organizations. We also examine selected "I.O's" such as the OAS, the EEC, OPEC, and the World Bank. Extensive attention is paid to the United Nations system in all its complexity. This course is a prerequisite and preparation for participation in the Model United Nations Program. Government 169 is recommended. Also listed for credit as International Development 210.

Mr. Trachte Offered every other year

211 MODEL UNITED NATIONS

The core component of this course is participation in the Harvard National United Nations Conference. The members of the class represent Clark University at the conferences by acting as delegates of some nation-state from the world community. Issues ranging from disarmament to human rights to current political crises are researched. Students prepare resolutions and speeches and learn the rules of procedure operative at the United Nations. Oral reports and a written paper also are required. Open to all qualified students though class size is limited and permission of the instructor is required. Government 210 or relevant experience strongly recommended.

Mr. Trachte Offered every year

239 U.S. FOREIGN POLICY

This course takes an analytic and historical approach to U.S. foreign policy. First, we identify and distinguish several alternative paradigms for understanding foreign policy. Contrary to the dominant media image, we find that facts are contingent upon one's perspective. What you see depends upon which glasses—orthodox, economic revisionist, ideological revisionist, neorevisionist—you wear. Second, we survey chronologically the strategic, economic, and systemic aspects of U.S. foreign policy since WW II. Crosslisted with History 238.

Mr. Trachte Offered every year

249 INTERNATIONAL POLITICAL ECONOMY

This course examines how international economic relationships involving trade, capital transfers, and population (labor) movements affect domestic political and economic development. Topics discussed include imperialism, dependency, interdependence, and integration. The focus is not limited to less developed countries. Equal weight is given to the examination of industrialized nations. Also listed for credit as ID 249.

Mr. Trachte Offered every other year

276 PEACE STUDIES

This course is concerned with the phenomenon of militarism in world politics and U.S. foreign policy. The meaning of militarism and its relationship to capitalism, alienation, sexism, and racism are explored. Specific attention is also paid to the nuclear arms race. Finally, strategies for peace such as arms control, disarmament, consciousness change, economic conversion, and mass movements are examined.

Mr. Trachte

Offered every other year

283 SEMINAR: THE SUPERPOWERS AND THE THIRD WORLD

The course examines North-South relations within the broader framework of East-West conflict and cooperation. Emphasis is placed on "super-power" perspectives on development and foreign policy objectives in the Third World. Issues to be covered include trade, energy sources, arms sales, and strategic concerns. Relevant countries from each of the major regions of the Third World are selected for study. Some previous courses in international relations are helpful. Also listed for credit as ID 283.

Ms. Sochor

Offered every other year

289 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

The substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the New International Economic Order, or issues in U.S. foreign policy. The course is designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor. Also listed for credit as History 291.

Mr. Trachte

Offered every year

AMERICAN POLITICS COURSES

150 INTRODUCTION TO AMERICAN GOVERNMENT

This is an introductory study of the processes and efficacy of the American governmental system. Primarily devoted to an overview of contemporary aspects of the national government, the course includes problems of federalism, salient civil liberties issues, and the roles of Congress, the President, the Supreme Court, and political parties in the decision making process.

Mr. Cohen

Offered every year

172 SUBURBIA: PEOPLE AND POLITICS

The growth of suburbs in the United States since the end of World War II has had considerable impact upon the nature of our metropolitan areas. Why has this growth occurred? What are the characteristics of the people who live in suburbs? Is suburban homogeneity a myth or reality? How are suburbs governed? What is political participation like? What sorts of issues are important to suburbanites? Is there a national suburban policy? Should there be one? These are the major questions to be explored in this course. This course is open to sophomores, juniors, and seniors.

Ms. Krefetz

Offered every year

175 WOMEN AND POLITICS

This is an exploration of the political behavior of American women and of the factors which condition their behavior, including: socialization

176 Government and International Relations

and learning of sex roles, social background and life situation variables, and historical arrangements of political institutions. Among the questions to be considered are: Why are women generally less interested, less active, and less efficacious politically than men are? What are the characteristics of those women who do engage in political activity? What is the likely impact of the women's liberation movement and women's issues on the future behavior of women in politics? Prerequisite: one previous government course.

Ms. Krefetz

Offered every year

204 THE AMERICAN PRESIDENCY

This is a study of the constitutional and other powers and functions of the president and the presidency via selected readings and individual research.

Mr. Cohen, Ms. Schaefer

Offered every year

209 THE U.S. SINCE 1945

Refer to course description under History 209.

Mr. Formisano

214 SEMINAR: BUSINESS AND POLITICS

This course examines the social responsibility of business to a community from a theoretical and a practical point of view. The theoretical aspects are explored through a series of readings of major writers in this area. The practical aspects are dealt with through the use of community resources in, for example, the legal, educational, and political sectors. This course takes the place of the tutorial program; it will, therefore, offer the latitude of individualized reports in specific areas of interest. Enrollment is limited to 20 students.

Mr. Rasmussen

Offered every other year

220 URBAN GOVERNMENT AND POLITICS

The primary focus of this course is on the various socioeconomic and political forces that affect American urban political systems. What are the resources and constraints on decision makers? Topics discussed include: the social, economic, and political nature of the city; the effects of the state and federal governments; relations between city and suburb; political structures and styles; the distribution of power; and race, ethnicity, and ethos theory. Later in the course, some attention is given to differences in urban policy outputs, primarily in the fields of education and welfare. Where relevant, differences and similarities in the politics of urban areas outside the United States are considered. Open to sophomores, juniors, and seniors.

Ms. Krefetz

Offered every other year

221 SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES

What difference does it make "who governs?" What sorts of variations are there among cities in their policy outputs in such areas as welfare, education, poverty, health, the police, and the criminal courts; and what accounts for the differences? After a critical review of the existing literature, research will be conducted on a policy area of the student's choosing in Worcester and/or other cities. Prerequisite: Government 220.

Ms. Krefetz

Offered every other year

223 SUBURBAN POLICY ISSUES

This seminar will pick up where the introductory suburban politics course leaves off and explore politics and policy making on several major issues in suburban communities, e.g., zoning and land use, education, and property taxes. Students will conduct original research on these issues in Worcester and Boston suburbs. Prerequisite: Government 221 or permission of instructor. The course is limited to 15 students.

Ms. Krefetz

Offered every other year

224 BLACK POLITICS IN THE UNITED STATES

This course analyzes the distribution of power as it affects the Black community. Among those topics to be explored are: Black congressmen and lobbies, Black politics in cities, the impact of Blacks on the bureaucracy, and a comparison of Northern and Southern Black politics. Also listed for credit as International Development 225.

Ms. Enloe

225 POLITICS OF BUREAUCRACIES

Refer to course description under Public Policy and Administration.

231 SEMINAR IN POLITICS AND ENVIRONMENT

Refer to course description under Geography 231. Also listed for credit as Environmental Affairs 231.

Mr. Kasperson

251 AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS

This is a study of the structure and functioning of the American party system and the role of selected interest groups in American politics, including some ethnic and economic influences. Special emphasis is placed on the processes and problems involved in the nomination and election of the president. Prerequisite: American Government desirable, but not required.

Mr. Cohen

Offered every year

253 AMERICAN CONSTITUTIONAL LAW—NON-CIVIL LIBERTIES ASPECTS

This is a study of the major non-civil liberties developments and problems of American constitutional law and judicial behavior approached primarily by analysis of court cases. Both topical and, in some areas, developmental analyses are utilized. Major areas covered are: the constitutional powers of the three branches of the government, federalism, the development of the commerce and taxing powers, contract clauses, and the development of due process. Emphasis on class discussion. Prerequisite: permission of instructor.

Mr. Cohen

Offered every other year

254 AMERICAN CONSTITUTIONAL LAW AND CIVIL LIBERTIES

This is a study of some of the major developments and problems of American constitutional law and judicial behavior in the area of civil liberties approached primarily by the case method. Topics usually explored include such issues as freedom of speech, press and religion, and civil rights. Opportunities are afforded for a study of selected aspects of the rights of a person accused of a crime. Emphasis is placed on recent and contemporary developments and on class discussion.

Prerequisite: permission of instructor. Also listed for credit as History 235.

Mr. Cohen

Offered every year

255 THE LEGISLATIVE PROCESS

This is a study of policy making in Congress, involving problems of legislative organization and procedure, leadership, and presidential-legislative relationships; examined primarily by the case method and by individual research on particular pieces of recent legislation. Prerequisite: permission of instructor. The course is limited to 10 students.

Staff

Offered every other year

275 CITIZEN PARTICIPATION IN PLANNING

Refer to course description under Geography 275. Also listed for credit as Environmental Affairs 275 and Science, Technology and Society 275.

Mr. Ducsik, Mr. Kasperson

282 SEMINAR ON HOUSING POLICIES

A critical examination of federal housing policies and state and local zoning and land use regulations. The major political, economic, and cultural factors that shape the supply, quality, and location of housing and various income, age, and racial groupings in metropolitan areas are explored, with special attention to public housing and exclusionary zoning issues.

Ms. Krefetz

Offered every other year

294 ELECTORAL BEHAVIOR

Contemporary studies of voting behavior are used to explore the meaning of elections as the linkage between government and citizenry. The course addresses the questions of who votes and why, and it aims to identify and explain long-term trends in elections by focusing on the theory, methods, and data of recent political research.

Mr. Blydenburgh

Offered every other year

COMPARATIVE POLITICS COURSES

106 INTRODUCTION TO COMPARATIVE POLITICS

The course approaches the pitfalls and rewards of comparative analysis from three directions. First, we concentrate on a single foreign political system in all its complexity (e.g., Britain, Mexico, Japan). Second, we look at one political issue (e.g., pollution, crime, land reform) to see how several different countries cope with demands. Finally, we examine one concept used by political scientists to compare political systems (e.g., recruitment, ideology). This course is open to majors and nonmajors.

Ms. Sochor

Offered every year

112 COMPARATIVE AUTHORITARIAN SYSTEMS

The course focuses on the most conspicuous political fact of modern times—authoritarianism. Through a comparative study of several authoritarian regimes, the course seeks to understand the dynamics of modern authoritarianism: its inception and structure, its transitional or permanent nature, and its distinct variations. The course examines selected case studies from Europe, Latin America, and the Middle East.

Ms. Sochor

Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE

The course examines the concept, the origins, and the process of revolutionary change. Topics to be covered include the pre-conditions of revolution, the role of leaders and organizational tactics, the problems and consequences of the seizure of power, and the potential for de-radicalization and counter-revolution. Theories of revolution are studied from the perspective of revolutionary leaders as well as social scientists. Various revolutionary situations are examined in the course, but some previous familiarity with a major revolution (e.g., French, Soviet, Chinese) is useful.

Ms. Sochor

Offered every other year

182 COMPARATIVE EUROPEAN POLITICAL SYSTEMS

A comparative study of the major west European political systems. Study of the political historic development will lay the basis for comparison of modern functions of government. Stress is placed on political socialization and its importance for comparative politics.

Mr. Rasmussen

Offered every year

208 COMPARATIVE POLITICS OF WOMEN

This course examines the roles, influence, and participation of women in several different political systems. Changes—and lack of genuine changes—in women's political status are compared within the context of the entire political system (ideologies, bureaucratic organizations, party systems, class and ethnic cleavages, etc.). At least one previous course in government or women's studies is strongly advised.

Ms. Enloe

Offered every year

222 STRATEGIES OF DEVELOPMENT AND CHANGE IN COMMUNIST POLITICAL SYSTEMS

The course examines the relationship between ideology, power, and levels of economic development in the formation of communist political systems. Particular attention is given to the attempts by political leaders to devise strategies of development appropriate to their socio-political contexts. The course also considers continuing sources of social change and the domestic and international constraints on change. The comparative study will include China, Cuba, Yugoslavia, and the Soviet Union as the prototype of a communist political system.

Ms. Sochor

Offered every other year

228 COMPARATIVE POLITICS OF RACE AND ETHNICITY

This course explores the meaning of "ethnicity" and "race" for groups as different as American Blacks, South African Afrikaners, Soviet Muslims, and French Canadians in the politics of industrialized and Third World political systems. The interactions of sex, race, and class in politics will be analyzed. Some previous study of comparative politics, history, or sociology will be very useful.

Ms. Enloe

Offered every other year

235 COMPARATIVE BUREAUCRATIC POLITICS

In both industrialized and developing nations, bureaucratic departments have been critical to policy making and implementation. This course uses cases from Europe, Africa, and Asia to test generalizations about bureaucrats' impact on their political systems.

Ms. Enloe

Offered every other year

236 POLITICS OF SOUTHEAST ASIA

This course analyzes the changes, or blockage of changes, that have occurred in the area since 1945. Social, economic, cultural, and foreign factors shaping politics are examined. All countries will be discussed but focus will be on Malaysia, Indonesia, the Philippines, and Vietnam.

Ms. Enloe

Offered every other year

237 POLITICS OF SCANDINAVIA

This course analyzes twentieth-century political thinking with specific reference to Scandinavian thought and political systems. The examination is of major trends as they constitute unique Scandinavian developments or reflect a broader European pattern of thinking.

Mr. Rasmussen

Offered every other year

251 COMPARATIVE REVOLUTIONS

Refer to course description under History 251.

Mr. Lucas

256 GOVERNMENT AND POLITICS OF THE SOVIET UNION

The course examines the key factors in the formation, evolution, and operation of the Soviet political system. Topics to be discussed include the interaction between ideology and political culture, the role of the Communist Party in Soviet government and society, problems of development and socioeconomic transformation, and the challenge of political conflict and change.

Ms. Sochor

Offered every year

261 WOMEN AND MILITARIZATION IN A COMPARATIVE POLITICS PERSPECTIVE

This course will examine the analytical proposition that the process by which any society becomes militarized is in significant part an *engendered* process. The course will investigate specific political systems (e.g., U.S., Soviet, British, South African, Japanese, Philippines) in order to address such analytical questions as: what exactly are the distinctive characteristics of a social change process labeled "militarization?" What does one leave out of an explanation of when and why militarization occurs if one does not raise specific questions of gender ideologies and sexual divisions of labor? What factors in a given country's culture, economy, and historical experiences, and what gender ideologies and sexual divisions of labor, shape the patterns of militarization? The course will be organized as a seminar. Two previous government or women's studies courses are desirable. Limited to juniors and seniors.

Ms. Enloe

Offered every other year

265 POLITICS OF JAPAN

Japan is considered one of the world's four great powers. Yet its international political dynamics are not widely understood by Americans. This course will explore the major factors that have shaped Japanese politics and government policies since 1945. Among the topics that will be analyzed are: the group loyalties of Japanese, the factional rivalries within major parties, the influence of bureaucrats, the ambivalence that plagues Japan's foreign relations. The course is open to majors and nonmajors. Those interested in pre-1945 Japan are urged to take the course offered in History. Some previous courses either in Government or in Asian Studies are helpful.

Ms. Enloe

Offered every other year

266 ETHNOLOGY AND POLITICS OF THE CARIBBEAN

Refer to course description under Sociology 220. Also listed for credit as International Development 266.

Mr. Gerber, Mr. Rasmussen

Offered every other year

PUBLIC POLICY AND ADMINISTRATION

109 INTRODUCTION TO PUBLIC POLICY AND ADMINISTRATION

This course focuses on the administrative dimension of the public policy making and policy implementation process. The course describes the environmental setting of American public administration, describes selected problems and perspectives in public administration, explicates the historical and philosophical context of administrative action, reviews the procedural and institutional networks in the administrative process, and presents selected frameworks utilized for organizing the technical dimension of the policy process. Prerequisite: Government 150 or permission of instructor.

Mr. Coleman

Offered every year

213 POLICY ANALYSIS

Policy analysis is a means of critically examining public programs to provide decision makers with information on which to make policy decisions. Policy analysts use a variety of techniques, such as evaluation research, program budgeting, and survey research. In times of financial and political crises, when governments must make critical choices, the work of the policy analyst is crucial. This course examines (1) the purpose and context of policy analysis, (2) the various methods that are used in doing it, and (3) the implementation requirements and constraints involved in applied policy research. Both theoretical and applied case materials are used in this course.

Mr. Natchez

Offered every other year

221 SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES

Refer to course description under American Politics courses.

225 POLITICS OF BUREAUCRACIES

Bureaucrats are among the most neglected—and influential—actors in contemporary politics. This course examines the dynamics of bureaucratic politics in the U.S., with a special concern for federal level departments. Some of the questions pursued are: How much control does the White House exercise over federal agencies? Has “Watergate” had a lasting impact on bureaucratic operations? Why are some departments, such as treasury and defense, so much more influential in bureaucratic competition than others? How do bureaucrats cultivate their clienteles? This course is open to majors and nonmajors. Some previous courses in government will be helpful.

Ms. Schaefer (1982–83)

Offered every other year

230 BUREAUCRATIC ETHICS

This course will examine the duties and responsibilities of civil servants within the American system of government. Competing models of the relationship between bureaucracy and democracy—including Woodrow Wilson’s distinction between politics and administration, the “New Public Administration” theories of the late 1960s, and a third view which treats the civil service as a locus of democratic statesmanship—

will be examined. Case studies, including Supreme Court cases, will be discussed in order to promote development of the student's capacity for reaching refined and balanced judgments of politico-administrative issues.

Ms. Schaefer (1982–83)

Offered every other year

233 GEOGRAPHY OF PUBLIC SERVICES

Refer to course description under Geography 233.

Staff

269 PUBLIC POLICY AND MACHIAVELLI REVISITED

An in-depth analysis of Machiavelli's political theory and approach to policy making. The course differentiates between normative theory and objective analysis. In the process, themes developed by Machiavelli are applied to current policy formation and models for public policy analysis.

Mr. Rasmussen

Offered every other year

271 POLITICS AND ECONOMIC POLICY

This course examines economic policies that have been produced by the American political system during the New Deal and Post New Deal periods. This course examines fiscal and monetary policies, efforts to moderate prices, and employment policies not merely in terms of their technical standing in economic theory but equally in terms of the working assumptions made by the political elite and the mass public.

Ms. Schaefer

Offered every other year

282 SEMINAR ON HOUSING POLICIES

Refer to course description under American Politics courses.

298 PUBLIC CHOICE THEORY

Reviews some important recent political theories which make use of economic concepts in attempting to explain political phenomena. Emphasis is placed on evaluating the theory in terms of its success in accounting for established empirical propositions as well as its prescriptive uses and normative implications. Some of the subjects covered are theories of representative government, a theory of the organization and formation of groups, theories of voting systems, and a theory of bureaucratic behavior.

Mr. Blydenburgh

Offered every other year

Hebrew

See Department of Foreign Languages and Literatures.

History

DEPARTMENT FACULTY

Daniel R. Borg, Ph.D., Associate Professor of European History, Department Chair

George A. Billias, Ph.D., Professor of American History

Robert F. Campbell, Ph.D., Professor of American History, Emeritus
 Ronald P. Formisano, Ph.D., Professor of American History, Director
 of American Studies Program
 Tamara K. Hareven, Ph.D., Professor of American History
 Dwight E. Lee, Ph.D., Professor of European History, Emeritus
 Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of
 European History
 Richard B. Ford, Ph.D., Associate Professor of African and Comparative
 History, Codirector, International Development
 Paul Lucas, Ph.D., Associate Professor of European History
 Francis G. Couvares, Ph.D., Assistant Professor of American History
 Douglas J. Little, Ph.D., Assistant Professor of American History
 William Koelsch, Ph.D., Adjunct Professor in History
 Paul F. Burke Jr., Ph.D., Adjunct Associate Professor in History
 Douglas M. Astolfi, Ph.D., Dean, College of Professional and Contin-
 uing Education (COPACE), Adjunct Assistant Professor in History
 Stuart W. Campbell, Ph.D., University Archivist, Adjunct Assistant
 Professor in History
 Thomas C. Barrow, Ph.D., Affiliate in History
 Marcus A. McCorison, M.S., Director of the American Antiquarian
 Society, Affiliate in History

UNDERGRADUATE PROGRAM

Students choose a history major for different reasons. Those preparing for careers in government, law, and sometimes business choose the major for the opportunity it offers in gaining insight into the diversity of human affairs. They desire a humanistic study geared toward a practical end. Others view the history major as the broadest and most flexible one in which to study their particular interests from a number of perspectives. Some are committed historians before they arrive at Clark. Their counterparts are those who become history majors by a process of elimination. For history majors and nonmajors alike, history provides an insight into their own individual and collective pasts and, therefore, into their own identities. History courses also introduce them to the non-Western world by giving them some understanding of the historical evolution of other peoples and cultures.

UNDERGRADUATE MAJOR

(Consult the handbook for undergraduates, *Studying History at Clark*, for an elaboration of the major and its options. The handbook is available in the History Office.)

The department is presently implementing new major requirements. If you entered Clark as a freshman before 1982 or as a transfer student in 1982 or before, the *old major requirements* still apply. If you entered as a freshman after 1982, you must meet the *new major requirements*. In either case, the number of courses is the same: nine history courses and four related courses.

The Old Major Requirements

- a) You must take *nine* history courses and *four* related courses in either the humanities or the social sciences.

- b) Of the nine history courses,
 - 1) *one* must be an introductory course (either History 110, 120, 170, 171, or 190), preferably taken in your freshman year
 - 2) *two* must be 200-level courses in American history;
 - 3) *two* must be 200-level courses in non-American history; and
 - 4) *one* must be a "capstone" course, usually taken in the senior year.
- c) Your capstone course is determined by whichever of three tracks you choose to follow in your major:
 - 1) For Track I: History 295.
 - 2) For Track II, one of the following:
 - History 204, COLLOQUIUM: INTERPRETATIONS OF AMERICAN HISTORY
 - History 296, PRACTICUM IN THE TEACHING OF HISTORY
 - History 297, RESEARCH PROJECTS (in your concentration)
 - History 298, DIRECTED READINGS (in your concentration)
 - 3) For Track III: History 293, HONORS THESIS RESEARCH.

The Three Tracks

Your transcript will reflect which track you have followed.

Track I: For General Majors

Follow the general requirements, taking History 295 as the capstone.

Track II: For Majors Who Wish to Concentrate Courses Around Some Topic

The general requirements apply to Track II as well. Track II presupposes, however, that you have refined your interest to the point of concentrating specifically in some historical theme. You might wish, for example, to concentrate in American or Jewish thought and culture, or in European studies, and choose some theme within one of these by which you select history and related courses. The handbook for undergraduates contains examples of course choices for themes within each of these concentrations. The history staff has also worked out hypothetical sequences of courses around some theme in each of twenty-five concentrations. These examples are available in the History Office and in the office of each history adviser. Of course, you define your own theme in whatever concentration you choose. The capstone course you choose should serve to develop your concentration.

Structured Concentrations

You may opt to follow a structured concentration (requiring certain courses) in two areas:

American Studies

International Relations.

Consult the requirements under each of the above concentrations in this catalog. Structured concentrations are interdisciplinary programs involving other departments. You may construct your own concentration in American studies, but it would be called American civilization.

Track III: For Honors Majors in Concentrations

As in Track I, you choose the divisional emphasis (humanities or social sciences) and, as in Track II, a concentration. You write a research thesis on some topic in your concentration (two course credits) and take a comprehensive examination on the theme of your concentration (after

a reading course of one credit), both in your senior year. Honors students also take History 292, the honors proseminar, in their sophomore or junior years. The honors track is valuable not only for would-be professional historians, but also for those who intend to pursue any career that requires analysis of complex issues and good writing. (A brochure on the honors program is available in the History Office.)

The old major is not formally a structured major; no single course or sequence of specific courses is required. The formal requirements, the tracks, and the examples of concentrations available for your inspection are meant to help you plan a coherent major according to your interests. In these examples, the department has tried to accommodate interests of majors as varied as women's history, Black history, American political history, and German thought and culture.

The New Major Requirements

- A. You must take *nine* history courses and any *four* non-history but related courses.
- B. Of the nine history courses,
 - 1) *One* must be in one of the following four concentrations that you choose as the base for your major:
 - a) In American History,
 - History 110, INTRODUCTION TO HISTORY AND AMERICAN STUDIES
 - History 116, RACE AND ETHNICITY IN AMERICAN HISTORY
 - History 120, AMERICA AND THE WORLD
 - History 130, FRESHMAN COLLOQUIUM in American history
 - b) In European History,
 - History 130, FRESHMAN COLLOQUIUM in European history
 - History 170, OUR EUROPEAN ROOTS
 - History 171, OUR EUROPEAN ROOTS
 - c) In Global History (non-US and non-European)
 - History 120, AMERICA AND THE WORLD
 - History 130, FRESHMAN COLLOQUIUM in Global history
 - History 190, SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY (or an equivalent course—see chairman)
 - d) In other concentrations, such as
 - 1) Jewish Studies
 - History 173, INTRODUCTION TO THE HISTORY AND CULTURE OF ANCIENT ISRAEL
 - History 174, THE JEWISH EXPERIENCE
 - 2) International Development
 - History 125, DEVELOPMENT PROBLEMS
 - 3) Women's Studies, Black Studies, other thematic studies of various types or self-designed concentrations—see the chairman.
 - 4) Predesigned structured concentrations (American Studies and International Relations)—see relevant sections in this catalog.
 - 2) *one* must be a 100-level course outside of your chosen concentration

- 3) *two* must be 200-level courses within your chosen concentration,
 - 4) *two* must be 200-level courses outside of your chosen concentration,
 - 5) *two* may be any history courses that you wish to take on any level,
 - 6) *one* must be a capstone course, usually taken in the senior year.
- C. Your capstone course must be one of the various options listed above under the old major requirements.
 - D. In the honors program, you must meet the general requirements of the new major, including the choice of a concentration, and earn the four honors credits listed above under the old major requirements as part of, or in addition to, the generally required nine history courses.
 - E. If you meet the general requirements for the major, your transcript will merely state that you majored in history. If you successfully complete the honors program, your transcript will state that you majored in history with honors.
 - F. Consult "Track II" under the old major requirements above. Here you will note that the department proposed that a major follow one of 25 more precise "concentrations" by selecting courses according to some theme. The department still recommends such planning and you are encouraged to consult the examples of such concentrations found in the undergraduate handbook, in the History Office, and in the office of each Clark historian. If you plan your courses in this manner, your transcript will also contain the label of your more precise concentration.

GRADUATE PROGRAM

The areas of graduate study at Clark are American history and modern European history, with select non-Western history as supporting fields. Emphasis is placed on American history because of the department's affiliation with the American Antiquarian Society, which provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history prior to 1876. A dozen smaller libraries in Worcester, with combined holdings of over a million volumes, further extend the resources of the Clark library, as does easy access to Boston, Providence, and New Haven area research facilities.

The department offers graduate work in the form of reading seminars (colloquia), research seminars, and individual tutorials for both reading and research purposes. First and second year students take three courses each semester; one of these courses must be expressly devoted to research for the purpose of producing a substantial research paper. Beyond their research seminar, students fill out their program by taking colloquia, additional research seminars, and upper-division undergraduate courses. The chairman assigns incoming graduate students to faculty advisers, who help design student programs. With the permission of the adviser, a student is encouraged to take suitable courses in other departments or Consortium colleges.

MASTER OF ARTS

The department enrolls a limited number of terminal master's candidates and awards the degree to students who have completed the work of eight courses and one-year residence requirement; have (1) either submitted two substantial research papers prepared in two

seminars, which are jointly equivalent to the master's thesis, or (2) submitted a master's thesis; and have passed the required oral examination. (The department now admits part-time M.A. students, whose residency requirement is defined in terms of courses taken.)

Ph.D. candidates, who have passed their preliminary examination, (whether or not they will continue with a dissertation) may also receive the degree of master of arts.

CERTIFICATE OF ADVANCED GRADUATE STUDY (C.A.G.S) IN INTERDISCIPLINARY STUDIES

With the departments of English and Modern Languages, the department sponsors an interdisciplinary C.A.G.S. Students, who have already earned the master's degree, take eight courses that center around the area of their interest. A brochure is available in the office of the History Department.

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading, and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an M.A. degree must ordinarily spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass the preliminary examination, and write a doctoral dissertation within seven years of matriculation. (In recent years the department has also admitted part-time Ph.D. students; their residency is defined in terms of courses taken.)

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language: French, German, Spanish, or Russian. Students concentrating in American history may substitute a program in quantitative techniques or computer science for a foreign language. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The chairman will designate an examiner in each language, who will determine if the student is proficient enough to use the language as a research tool. An entering student must take a language examination as soon as it is offered in the first semester of residence and must have passed this examination by the end of the first calendar year of residence in order to register for the second year. If required, the second language examination should be attempted early in the second year and must be completed before the student registers for the third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

Teaching Experience: Some teaching experience at the college level is a prerequisite for the Ph.D. degree. Students normally meet this requirement in their second or third years as teaching assistants.

Fields: Soon after arriving at Clark, each student, in cooperation with his/her adviser, defines four fields and prepares for them in whatever ways seem appropriate in view of her/his background and interests. Students specializing in American history normally offer the full scope of American history as two fields. Those concentrating in non-American history normally offer one American field. (The dividing line between the two American fields generally falls at 1815.) Any student may offer a nonhistorical subject as a field, usually within the social sciences, or prepare an interdisciplinary field.

Preliminary Examination: One of the four fields must be offered for oral examination at the end of the student's first year. Prior to taking the oral, the student must submit two research papers completed in the first year. The remaining three fields will be examined, again orally, at the beginning of the student's third year. The combined oral examinations constitute the "preliminary examination" required by the Graduate Board. Students who have passed their preliminary examinations may, upon request, receive the degree of master of arts.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation adviser as soon as possible. The process of writing a dissertation is outlined in a brochure, "Dissertation S.O.P.," which may be obtained from the department secretary.

Deadline for Completion: All work required for the doctor's degree must be completed within a seven-year period after matriculation. In unusual circumstances only, such as part-time study or extended illness, the department may grant a specified extension of time.

COURSES

NOTE: Undergraduate courses are of two types: (1) courses designed for freshmen and sophomores and numbered 100–199, and (2) advanced courses numbered 200–299. The latter carry no prerequisite (unless specifically noted) and are open to freshmen and sophomores as well as upper-class students without permission of the instructor. In case of doubt, these students should consult their instructor. The term *pro-seminar* indicates courses of limited enrollment that combine reading, discussion, and written reports. The term *seminar* indicates a research course.

U.S. HISTORY

110 INTRODUCTION TO HISTORY AND AMERICAN STUDIES

This is an introduction to basic problems of interdisciplinary study and historical method as revealed in American issues and writings. The nature of literary, historical, and sociological explanation of individual and group behavior will be examined in the context of the disciplines of history and literature. Autobiography, biography, family history, narrative, fiction, and historiographical writings will be read and discussed. Also listed for credit as English 110.

Mr. Ford, Mr. Formisano

Offered every year

116 RACE AND ETHNICITY IN AMERICAN HISTORY

This course explores the changing racio-ethnic cultural configuration and social stratification through U.S. history. Beliefs and ideas reflecting racial and ethnic patterns will be examined to comprehend the intellectual tradition that imparted meaning to this changing social reality.

Mr. Billias, Mr. Couvares

Offered every year

120 AMERICA AND THE WORLD

This course assumes: 1) that the United States will be a world power in year 2000 and 2) that we should, therefore, understand America's development within the context of world history. Hence, in chronological terms, the course stresses the period since the turn of the twentieth century, when America first emerged as a world power. Among the course's themes: the expansion of Europe into an Atlantic civili-

zation, the Atlantic revolution, America's industrial development and the rise of an American continental empire, America and the two world wars, America and the rise of the Third World, the rise of the multinational corporations, the Cold War, and imperial America as a global power in the 1960s and 1970s.

Mr. Billias, Mr. Little

Offered every year

130.1 FRESHMAN COLLOQUIUM: THE RISE OF AMERICAN MASS CULTURE

This course will introduce freshmen to key issues in the history of popular culture, in the modern American context. In studying the emergence of movies, spectator sports, broadcasting, advertising, and pop music, we will consider "top down" and "bottom up" theories of popular culture. Besides analyzing original sources and historical studies, students will engage in criticism, keep a "criticism log," write reviews of popular entertainment, etc.

Mr. Couvares

Offered every other year

130.2 FRESHMAN COLLOQUIUM: BUSING IN BOSTON

An introduction to major conflicts in American society (racial, religious, ethnic, class) as expressed in school desegregation. Literature read and discussed ranges through educational, social, and political history, and contemporary social science.

Mr. Formisano

Offered every other year

200 AMERICA'S FORMATIVE YEARS

The basic institutions of American civilization and the prevailing attitudes of the present were shaped in large measure during the colonial era. This course will deal with the foundations of such institutions as the family, church, and local community in America as well as the development of representative political institutions. There also will be an examination of American attitudes toward race, religion, class distinctions, cultural ethnocentrism, and imperial relations with the mother country during the same period. The aim of the course will be to analyze the reasons for two major tendencies that seemed to develop in the American colonies: the erosion of traditional European attitudes toward authority and the emergence of a psychology of accommodation resulting from the pressures arising from the increasingly pluralistic character of the population.

Mr. Billias

Offered every other year

201 ERA OF THE AMERICAN REVOLUTION

This course is an analysis of American society in the pre-revolutionary period with particular emphasis upon the ideological and political developments that led to the War of Independence.

Mr. Billias

Offered every other year

202 FORMATION OF THE NEW NATION

This is an analysis of the American revolutionary experience, political theories in the making of the federal Constitution, problems of the new government, and developments in the American political tradition through the Jeffersonian era.

Mr. Billias

Offered every other year

- 204 COLLOQUIUM: INTERPRETATIONS OF AMERICAN HISTORY

This is an undergraduate-graduate course; undergraduates may enter with the permission of instructor. (See course description under History 304.)

Staff

Offered every other year
- 206 NINETEENTH CENTURY U.S. POLITICAL HISTORY

This is an introduction dealing with the emergence of basic institutions, conflicts, and processes that became characteristic of modern American politics.

Mr. Formisano

Offered every year
- 208 THE U.S., 1900-1945

This is a survey of the U.S. from the progressive era through W.W. II. The course emphasizes the emergence of modern American culture, the rise of an imperial presidency, and the growth of government intervention in the economy from T.R. to F.D.R. Topics include the decline of socialism, the impact of war on American society, and the persistence of racial and ethnic conflict.

Mr. Little, Mr. Couvares

Offered every year
- 209 THE U.S. SINCE 1945

This is a survey of the U.S. from Hiroshima through Watergate. The course focuses on the growth of an affluent society, the emergence of an imperial foreign policy, and the rise of the military-industrial complex. Major topics include anticommunism at home and abroad, the impact of the mass media on postwar American culture, the continuing quest for minority rights, and the endless war in Indochina. Also listed for credit as Government and International Relations 209.

Mr. Formisano

Offered every year
- 212 URBAN HISTORY

Traces the history of cities in America, paying special attention to the impact of migration and industrialization upon urban development and on the successes and failures of planning in the twentieth century.

Mr. Couvares

Offered every other year
- 213 LABOR HISTORY

Traces the social history of the American working class, emphasizing the impact of migration, economic development, culture, and politics on the evolution of class consciousness and labor organization; ends with a consideration of the relevance of the Japanese model of labor relations to the American situation.

Mr. Couvares

Offered every year
- 214 U.S. SOCIAL HISTORY, 1600-1860

Investigates the history of American society until the Civil War, treating in particular the decline of autonomous communities in the face of commercial and demographic growth, the interaction of races and ethnic groups, changes in family and in gender roles, and the emergence of a national economy and political culture before the Civil War.

Mr. Couvares

Offered every other year
- 215 U.S. SOCIAL HISTORY, 1860-Present

Traces the origins of modern American society: the rise of the corporation and the city, class and ethnic conflict, mass politics and culture,

and the active state; also focuses on the impact of these phenomena on individuals and families by means of case studies and family histories. Mr. Couvares Offered every other year

219 HISTORY OF AMERICAN WOMEN

Staff	Not offered on a regular basis
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221 AFRICAN/AMERICAN HISTORY

Staff	Not offered on a regular basis
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228 RIGHT-WING MOVEMENTS, 1790–1970

This course examines Wallace, McCarthyism, American fascism, social justice, Red Scare, A.P.A., know nothing, antimasons, anti-illuminati, and other movements. Prerequisite: permission of instructor.

230 SEMINAR: RISE OF POLITICAL PARTIES IN THE EARLY AMERICAN REPUBLIC

This is an undergraduate-graduate course; undergraduates may enter with the permission of instructor. (See course description under History 330.)

231 UNDERGRADUATE RESEARCHERS' SEMINAR: AMERICAN POLITICAL HISTORY

This is a seminar in U.S. political history: methods and topics. Concentration is on topics selected by instructor and students, with special attention to interdisciplinary methods and most recent works in political history.

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT

Refer to course description under Geography 234.

235 AMERICAN CONSTITUTIONAL LAW AND CIVIL LIBERTIES

Refer to course description under Government 254.

236 PROSEMINAR: THE AMERICAN MILITARY AND SOCIETY

Inquires into the impact of the military establishment upon American society in the past and present. Among the critical issues to be explored: America's age of free security to 1945; the creation of America's military establishment; the rise of America as a military power; the impact of wars upon American society; the relationship of the military-industrial complex to the government; the military nuclear age since 1945; the current nuclear arms race and its implications.

237 U.S. FOREIGN RELATIONS TO 1914

This course studies the creation of an American continental empire from the Revolution to the Spanish-American War. The course emphasizes the role of the main policy makers (Franklin through McKinley) in shaping American territorial and commercial expansion. Major themes include diplomacy and the making of the U.S. Constitution, the influ-

ence of sectional conflict on antebellum foreign policy, and the economic aspects of American expansion after the Civil War.

Mr. Little

Offered every other year

238 U.S. FOREIGN RELATIONS SINCE 1914

Students will examine the emergence of the U.S. as a major world power in the twentieth century. The course focuses on the domestic sources of foreign policy and the assumptions of the major policy makers (Wilson through Kissinger). Important themes include the American response to a revolutionary world since 1910, the increasingly dominant role of the president in the making of U.S. foreign policy, and the changing position of the U.S. in the international economy.

Mr. Little

Offered every year

240 AMERICAN CULTURE AND SOCIETY 1820–1860

Refer to course description under English 240.

Mr. Conron, Staff

241 AMERICAN THOUGHT AND CULTURE SINCE 1860

Refer to course description under English 241.

Mr. Conron, Staff

243 AMERICAN ANTIQUARIAN SOCIETY SEMINAR IN AMERICAN STUDIES

This seminar, given at the A.A.S. (about two miles from Clark), affords students an opportunity to do original research in the society's unique holdings. Students should apply in the spring through Mr. Conron (English Department) or Mr. Formisano.

A.A.S. Staff

Offered every year

246 SEMINAR: CLARK IN HISTORICAL PERSPECTIVE

After several weeks of common reading on the role of higher education in American culture—emphasizing the rise, character, and impact of the American university—members of the seminar work intensively with archival material on Clark-related topics of interest to them. Also listed for credit as Education 241.

Mr. Koelsch

Offered every other year

247 SEMINAR: AMERICAN SCIENCE SINCE 1890

During the first half-semester, students read and discuss selected recent writings in the social and intellectual histories of seven sciences: physics, chemistry, biology, geology, meteorology/climatology, anthropology, and geography, in the period since the beginnings of Clark. During the second half, seminar members work on research papers in specific areas of one of those sciences.

Mr. Koelsch

Offered every other year

285 PROSEMINAR: THE MULTINATIONAL CORPORATION

This course considers the growth and development of the multinational corporation from the late nineteenth century through the 1970s. The course examines why multinationals expand abroad, how they affect the host country, and in what manner they influence U.S. foreign policy. Emphasis on case studies from the oil, mineral, and utilities industries. Prerequisite: permission of instructor.

Mr. Little

Offered every other year

291 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

The substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the New International Economic Order, or issues in U.S. foreign policy. The course is designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor. Also listed for credit as Government 289.

Mr. Little, Mr. Trachte

Offered every year

EUROPEAN HISTORY

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHAEOLOGY

Refer to course description under Classics 121.

Mr. Burke

122 INTRODUCTION TO ROMAN CULTURE, ART, AND ARCHAEOLOGY

Refer to course description under Classics 122.

Mr. Burke

150 NARRATIVE IN ANCIENT HISTORICAL WRITING

Refer to course description under Classics 150.

Mr. Burke

170 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE "FALL" OF ROME THROUGH THE RENAISSANCE AND REFORMATION

The principal goal of the course is to familiarize students from all departments and disciplines of study with the basic outlines of the developments of Western society and, therefore, the character of our collective identity. For the would-be history major, a secondary goal is the presentation of the varieties of historical "angles"—cultural, political and military, economic and social, etc.—and the integration of these analytical approaches into a coherent, popular narrative. The medieval period is emphasized because our modern history is rooted in it. Students are advised to take both History 170 and 171 since they are parts of a whole, but either course may be taken without the other.

Mr. Lucas

Offered every year

171 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE SEVENTEENTH CENTURY TO THE PRESENT

The goal of the course is the same as History 171. The course will begin with the Scientific Revolution of the seventeenth century and the Enlightenment of the eighteenth and conclude with an examination of our contemporary spiritual, material, and institutional existence in the light of our past development. Students are advised to take both History 170 and 171 since they are parts of a whole, but either course may be taken without the other.

Mr. Lucas

Offered every year

250 THE FORMATION OF THE MODERN STATE: GROUP CONSCIOUSNESS, INDIVIDUALISM, AND SOCIAL ORGANIZATION IN "OLD EUROPE," 1550-1789

This is an examination of pre-French Revolutionary Europe as a corporative and customary political culture; a study of how that culture was altered by absolutism, militarism, mercantilism, early capitalism, modern science, and the requirements of the international system of European states; an appreciation of the social and ideological legacies of the ancient regime.

Mr. Lucas

Not offered on a regular basis

251 THE COMPARATIVE STUDY OF REVOLUTIONS: THE FRENCH REVOLUTION OF 1789 AND THE BEGINNINGS OF MODERN REVOLUTIONS

This is an analysis of old and new ideas of revolution including ritual, resistance, reactionary restoration vs. innovation; the "democratic" revolution; the psychology, sociology, and social psychology of revolutionary behavior; and the relevance of the French Revolution to twentieth-century issues. Also listed for credit as Government and International Relations 251.

Mr. Lucas

Offered every other year

252 NINETEENTH-CENTURY EUROPE

This is a lecture and discussion course centering around the problems and dilemmas of various European political societies as they responded to the tug of modernity during the century of European preeminence throughout the world.

Mr. Borg

Offered every other year

253 TWENTIETH-CENTURY EUROPE

This is a lecture and discussion course concentrating on the characteristic problems of Europe in a century of war, economic convulsion, and political instability.

Mr. Borg

Offered every year

254 PROSEMINAR: WORLD WAR I AND EUROPE

Readings and papers on the significance and course of the war and its impact on European society.

Mr. Borg

Not offered on a regular basis

255 PROSEMINAR: TOTALITARIANISM

Readings and papers on the origins, ideology, and operation of the German Nazi and Russian Soviet regimes.

Mr. Borg

Not offered on a regular basis

259 MODERN GERMANY

The course offers an examination of the convulsive course of German history over the past century.

Mr. Borg

Offered every other year

260 MODERN SPAIN AND THE CIVIL WAR

This is a study of the history of twentieth-century Spain with emphasis on the origins and the implications of the Spanish Civil War. The course examines the political and economic modernization of Spain from 1898 through the Franco regime. Topics include the development of a re-

publican tradition, the rise of the revolutionary left, and the role of the army in Spanish politics.

Mr. Little

Not offered on a regular basis

264 REVOLUTIONARY RUSSIA, 1900-1924

The central themes of this course are (1) the collapse of the tsarist regime and the rise of Soviet power and (2) the transformation of a social revolution into an unprecedented experiment of mobilizing a backward empire for global power. For the human dimension of this historic drama, students read Pasternak and Sholokhov and write a short paper on each.

Mr. Von Laue

Offered every other year

265 THE SOVIET REGIME FROM STALIN TO THE PRESENT

Mr. Von Laue

Not offered on a regular basis

271 IN SEARCH OF HUMANITY: EIGHTEENTH-CENTURY EUROPEAN INTELLECTUAL HISTORY

Students will study the "Enlightenment" and its heirs and critics: the scientific revolution, philosophical reformism, and early conservative romanticism. The emphasis is upon rival perceptions of man's psychological and social nature, history, and aesthetic and religious sensibilities as seen through great secondary treatments of the Enlightenment (which also introduce the student to various ways of doing intellectual history) and original sources: Hume, Beccaria, Rousseau, Condorcet, Kant, Burke, Savigny.

Mr. Lucas

Offered every other year

272 IN SEARCH OF HUMANITY: NINETEENTH-CENTURY EUROPEAN INTELLECTUAL HISTORY

This is a study of the elaboration of the "Enlightenment" by its heirs and critics. The emphasis is the same as in 264, but the focus shifts to an analysis of political and economic liberalism, Social Darwinism, racism, and "utopian" socialism in England and France followed by an analysis of nationalism, Marxism, positivism, old and new conservatism, and the reassessment of the values and progress of European civilization among principally Italian and German thinkers.

Mr. Lucas

Offered every year

JEWISH HISTORY

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics 160.

Mr. Burke

Offered every other year

173 INTRODUCTION TO THE HISTORY AND CULTURE OF ANCIENT ISRAEL

An introduction to ancient Israel as revealed by the contents and character of the Hebrew Bible/Old Testament, archaeological data, and non-Biblical literary and archaeological material from ancient Mesopotamia and ancient Egypt. Israelite civilization will be studied in the larger context of the ancient Near East.

Ms. Nathanson

Offered every year

174 THE JEWISH EXPERIENCE

A survey of the history of the Jewish community and the development of Judaism from the era of Alexander the Great (c. 325 B.C.E.) to the

present. This course examines the major political, religious, social and economic trends of each period as they affected the evolving Jewish community and the development of Judaism, and emphasizes elements of change and continuity as well as the interaction of the Jewish community with the larger culture/community.

Ms. Nathanson

Offered every year

223 THE AMERICAN JEWISH EXPERIENCE: A HISTORY OF JEWS IN THE UNITED STATES

A selected survey of the role of Jews in the United States. The creation of Jewish institutional life. The relation of Jews to their neighbors. The waves of immigration. Melting pot vs. ethnicity, assimilation vs. acculturation. The rise of denominations. The emergence of American Jewry in world affairs. American Jewry and the State of Israel. The future of American Judaism.

Mr. Waldoks

Offered every other year

273 WOMEN IN ANTIQUITY

A study of the roles of women in the societies of the ancient Near East, ancient Israel, Greece, Rome, the early Christian community, and rabbinic Judaism. Attention is given to the depictions of women in ancient literary sources and in archaeological material as well as to elements of change and continuity.

Ms. Nathanson

Offered every other year

274 RABBIS, ROMANS, AND RUINS

The development of Judaism from the reign of Alexander the Great (c. 325 B.C.E.) to the seventh century C.E. (A.D.). An examination of the constituents of Jewish culture in relation to the major political, social, religious, and economic trends of the Hellenistic world and of late antiquity. Special attention is paid to the impact of the Christianization of the Roman Empire on Judaism.

Ms. Nathanson

Offered every other year

275 CULTURE OF EASTERN EUROPEAN JEWRY

This survey of the cultural dimensions of Eastern European Jewry will span a period of close to a thousand years. The unique contributions of Eastern European Jewry (Hebraism, the Yeshivot, Yiddishism, Bundism, etc.) will be examined in their historical contexts. The *shtetl* experience as well as the rise of an urban proletariat in the nineteenth century will be discussed, and their links to American and Israeli Jewish life will be emphasized.

Mr. Waldoks

Offered every other year

276 MODERN JEWISH INTELLECTUAL HISTORY

The course will discuss the emergence of the Jew in a modern society at the time of the French Revolution. The political and ideological struggle over emancipation and adjustment will be traced through the growth of Jewish denominationalism in Western Europe. The competing ideologies of Jewish nationalism (particularly those of a non-Zionist character) will be examined through both primary and secondary sources. The course will reach the creation of the Weimar Republic and examine the background of Western Jewry before the rise of Nazism.

Mr. Waldoks

Offered every other year

277 HISTORY OF ZIONISM

Examines the development of Zionist ideologies and the emergence of Zionism as a political movement in response to the events of nineteenth- and twentieth-century Europe and the Middle East. Attention is also paid to the political and social history of the state of Israel and to the Arab-Israeli conflict.

Ms. Nathanson

Offered every other year

278 HOLOCAUST: THE DESTRUCTION OF EUROPEAN JEWRY, 1933-1945

This survey will discuss the rise of political anti-semitism; the place of the Jew in Eastern and Western European Society; the rise of German volkist ideology and its place in the creation of Nazism. Close attention will be paid to Jewish and non-Jewish reaction and resistance to Nazism and its policies of mass murder. The historical, philosophical, and theological implications of the Holocaust and its aftermath will be reviewed.

Mr. Waldoks

Offered every other year

LATIN AMERICAN HISTORY

177 LATIN AMERICAN HISTORY SINCE 1825

This is a survey of Latin American nations from independence to the present with emphasis on the twentieth century. Major themes include the persistence of neocolonial social and economic structures, the emergence of nationalist and revolutionary movements after 1900, and U.S.-Latin American relations.

Mr. Little

Offered every other year

279 PROSEMINAR: LATIN AMERICA—REVOLUTION, REFORM, AND REACTION

Examines the political and economic development of four Latin American nations—Argentina, Brazil, Chile, and Mexico—during the twentieth century. Special emphasis on the populist tradition among workers and peasants, the radicalization of the Roman Catholic church, and the rise of military authoritarianism.

Mr. Little

Offered every other year

AFRICAN HISTORY

179 THE HISTORY OF TRADITIONAL AFRICA

This is an introduction to the history of Africa south of the Sahara. The course will begin with the early civilizations of Kush, Axum, Ghana, Mali, Songhai, Benin, the Sanj, Congo, and Zimbabwe and continue through to the arrival of Europe. Attention will be given to eastern, western, and southern Africa. The approach will be largely historical and anthropological.

Mr. Ford

Not offered on a regular basis

180 HISTORY OF MODERN AFRICA

The course will introduce students to the major themes of modern African history. It will begin with an orientation to precolonial Africa and then consider four main periods: (1) the imperial years, (2) the struggle for independence, (3) the 1960s as a decade of independence,

and (4) the 1970s as a search for identity and development. The course will focus primarily on the years since 1945.
Mr. Ford Not offered on a regular basis.

286 CITIES IN AFRICA

The course will consider historical dimensions of African urbanization with special attention to the spatial and functional role of cities. Agricultural, administrative, political, market, and industrial uses will be examined. The impact of urbanization on African cultural values will be examined.
Mr. Ford Not offered on a regular basis

ASIAN HISTORY

181 TRADITIONAL CHINA

Focuses on Chinese life, institutions, and culture from the earliest times through the mid-nineteenth century. Creative literature, philosophical writings, and selected primary documents will be used to supplement information presented in the textbook and lectures.
Staff Not offered on a regular basis

182 MODERN CHINA

Introduces students to events, personalities, and concepts of particular importance for understanding China's history from China's confrontation with the West in the mid-nineteenth century through the present. Readings that present the Chinese view of events will be used to supplement interpretative studies by Western scholars.
Staff Not offered on a regular basis

INTERNATIONAL DEVELOPMENT

125 DEVELOPMENT PROBLEMS

This is an introduction to the study of development. The course will consider the historical evolution of the concepts of economic growth and development; the nature of development; five alternative approaches to development ranging from conventional theories of capital intensive investment to more radical theories of labor intensive investments; and for a conclusion, an assessment of development policies of governmental and nongovernmental organizations. Historical, geographic, and political considerations will receive special attention. Also listed for credit as International Development 125 and Geography 125.
Ms. Thomas Offered every year

283 CLIMATE AND HISTORY: AN ANALYSIS OF THE INFLUENCE OF CLIMATE ON HISTORICAL CHANGE

This is an inquiry into the influence climatic patterns have exerted on historical events. The course will look primarily at Africa and the U.S. In Africa, attention focuses on the Sahel over the last eight or ten thousand years, but with special focus on the last two thousand. In southern Africa, climate and lifestyle of five different population groups are compared with a similar environmental setting in the great plains of North America. Special attention is given to the Turner hypothesis for institutional development on the frontier.
Mr. Ford Not offered on a regular basis

284 CLIMATIC HISTORY AND DEVELOPMENT

The course consists of a series of case studies for development projects in diversified climate settings. Students will select two or three climatic world regions in Asia, Africa, or Latin America and consider different development strategies in agriculture, health, light industry, or resettlement in each of these regions. The goal of the course is to determine appropriate development strategies for varied cultural and physical settings.

Mr. Ford

Not offered on a regular basis

GENERAL GLOBAL HISTORY

190 SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY

Starting with a brief assessment of the world in 1900, the course offers historical background to the contemporary global order. It is designed to help students view their lives within a worldwide perspective in terms of politics, economics, and culture as well as the human costs and individual resilience shown during the great crises of this century. Students write essays every other week, giving their reactions to the assigned reading and class discussion.

Mr. Von Laue

Offered every year

256 THE EXPANSION OF EUROPE, 1415 TO THE PRESENT

Staff

Not offered on a regular basis

DEPARTMENTAL HONORS

292 HONORS PROSEMINAR

This course attempts to teach students how to write analytical and synthetic research papers and to write them well. The course also introduces students to problems of studying history by learning about the aspirations, advantages, and disadvantages of "historicism." Open to sophomores and juniors, to majors and nonmajors, and to honors and nonhonors students.

Mr. Lucas

Offered every year

293 HONORS THESIS RESEARCH

Honors students receive up to two credits for thesis research. Honors students preparing for the comprehensive exam receive credit for their reading under History 297. Offered for variable credit.

Staff

Offered every year

SPECIAL PROJECTS

295 CAPSTONE PROSEMINAR

For Track I majors.

Staff

Offered every year

296 PRACTICUM IN THE TEACHING OF HISTORY

Variable credit.

Mr. Ford

297 RESEARCH PROJECTS

Undergraduates, normally juniors and seniors, may construct an independent research course with an instructor of their choosing. Prerequisite: permission of instructor. Offered for variable credit.

Staff

298 DIRECTED READINGS

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor. Prerequisite: permission of instructor. Offered for variable credit.

Staff

299.9 INTERNSHIP

The student who undertakes an interdisciplinary internship for more than two credits may receive up to two credits in history and the remainder in another department. Prerequisite: permission of instructor and of chairman. Offered for variable credit.

Staff

GRADUATE COURSES

301 STUDIES IN EIGHTEENTH-CENTURY AMERICAN HISTORY

Independent studies. Offered for variable credit.

Mr. Billias

304 COLLOQUIUM: INTERPRETATIONS OF AMERICAN HISTORY

This course takes a historiographical approach to the literature in American history from the beginning of the colonial period until the end of America's second War of Independence.

Staff

Offered every other year

312 STUDIES IN AMERICAN SOCIAL HISTORY

Independent studies. Offered for variable credit.

Mr. Couvares

315 STUDIES IN ECONOMIC HISTORY

Independent studies. Offered for variable credit.

Staff

330 RESEARCHERS' SEMINAR: THE ROLE OF THE FEDERAL CONSTITUTION IN AMERICAN HISTORY

This research seminar is designed to trace the impact of American constitutional ideas from two different perspectives: the effect of the Federal Constitution of 1787 on the rest of the world; and the effect of the world on Americans in terms of their changing perceptions and attitudes toward the Constitution as they witnessed their constitutional ideas being used abroad.

Mr. Billias

Offered every other year

331 RESEARCHERS' SEMINAR: AMERICAN POLITICAL HISTORY

This is a seminar in U.S. political history: methods and topics. Concentration is on topics selected by instructor and students, with special attention to interdisciplinary methods and most recent works in political history.

Mr. Formisano

Offered every year

335 STUDIES IN NINETEENTH-CENTURY U.S. HISTORY

Independent studies. Offered for variable credit.

Staff

336 STUDIES IN AMERICAN CONSTITUTIONAL HISTORY

Independent studies. Offered for variable credit.

Staff

337 STUDIES IN DIPLOMATIC HISTORY

Independent studies. Offered for variable credit.

Mr. Little

341 STUDIES IN AMERICAN THOUGHT AND CULTURE

Independent studies. Offered for variable credit.

Mr. Koelsch, Staff

342 STUDIES IN AMERICAN INTELLECTUAL HISTORY

Independent studies. Offered for variable credit. Also listed for credit as Philosophy 335.

Staff

344 STUDIES IN RECENT AMERICAN HISTORY

Independent studies. Offered for variable credit.

Mr. Little, Staff

350 STUDIES IN EARLY MODERN EUROPEAN HISTORY

Independent studies. Offered for variable credit.

Mr. Lucas

351 STUDIES IN EUROPEAN INTELLECTUAL HISTORY

Independent studies. Offered for variable credit.

Mr. Lucas

352 STUDIES IN MODERN EUROPEAN HISTORY

Independent studies. Offered for variable credit.

Mr. Borg

359 STUDIES IN RUSSIAN HISTORY

Independent studies. Offered for variable credit.

Staff

380 STUDIES IN AFRICAN HISTORY

Independent studies. Offered for variable credit.

Mr. Ford

383 STUDIES IN CHINESE HISTORY

Independent studies. Offered for variable credit.

Staff

395 PRACTICUM IN THE TEACHING OF HISTORY

Offered for variable credit.

Mr. Ford, Staff

399 GRADUATE READINGS

Offered for variable credit.

Staff

Humanistic Studies

PARTICIPATING FACULTY

Martyn Bowden, Ph.D., Professor of Geography, Program Director
Walter Schatzberg, Ph.D., Professor of German
Albert A. Anderson, Ph.D., Associate Professor of Philosophy
Paul F. Burke Jr., Ph.D., Associate Professor of Classics
John Conron, Ph.D., Associate Professor of English
Marvin D'Lugo, Ph.D., Associate Professor of Spanish
Wesley Fuller, M.Mu., Associate Professor of Philosophy
Susan Hanson, Ph.D., Associate Professor of Geography
Douglas L. Johnson, Ph.D., Associate Professor of Geography
James D. Laird, Ph.D., Associate Professor of Psychology
Frank W. Puffer, Ph.D., Associate Professor of Economics
Michael K. Spingler, Ph.D., Associate Professor of French
Billie Lee Turner II, Ph.D., Associate Professor of Geography
Bonnie Lee Grad, Ph.D., Assistant Professor of Art History

The Program of Humanistic Studies (PHS) is an interdisciplinary program supported through a grant of the National Endowment for the Humanities. Although the program does not offer an undergraduate major, each semester it provides undergraduates a series of integrated seminar courses, or "clusters," each centered around a different theme and exploring the ways in which that theme is approached by investigators from a variety of humanities and social science fields. The objective of the cluster approach to interdisciplinary learning is to combine, for both the student and the faculty member, the strengths of a disciplinary grounding in a subject with the benefits of an interdisciplinary focus on themes and methods.

The humanistic education is concerned with the assumptions and methods the human mind has established in certain areas of knowledge, with emphasis on cultural and historical contexts that give rise to that knowledge—an appreciation for the significance of that subject in its contemporary as well as historical dimensions. In short, the learning experience is broadly defined, not as an isolated approach to a narrow kind of knowledge, but rather as modes of learning which continually stress the tradition and contemporary context of knowledge.

Each cluster in PHS consists of a group of three or four course components in different departments and/or disciplines taught concurrently on aspects of a single theme. Although individualized in terms of the particular methodologies used in each course, all courses in a cluster share a number of common features:

1. general theme;
2. a number of shared readings in all courses within a given cluster;
3. some joint sessions in which all courses in the cluster will meet to discuss the common theme or work in a common activity;
4. a common number of writing assignments, the evaluation of which will be shared in some measure by all faculty participating in the cluster.

All cluster courses are listed in the individual departments and may be used to fulfill major requirements in appropriate departmental majors.

THEME-CENTERED CLUSTERS

AMERICAN SPACE AND ITS EUROPEAN ROOTS

A cluster in the Program of Humanistic Studies, this is an examination of the European images of the known world at the time of the discovery of America, of how these early notions affected later thought about America in the areas of geography, literature, and the arts, and of the succession of American (and European) images of American space to the present. Using literature, film, and other artistic forms, specific models are studied in a variety of contexts: the island, the city, the garden, the frontier, the general contrast between primitive and civilized spaces. This course is listed for credit as English 172, Geography 172, Philosophy 162, and Comparative Literature 162. Each course is limited to 15 students.

Mr. Conron, Mr. Bowden,
Mr. D'Lugo, Mr. Anderson

Offered every other year

AMERICAN LANDSCAPE

A cluster course in the Program of Humanistic Studies and the American Studies Concentration. Coordinated courses in art history, cultural geography, and American literature will explore common themes in the evolution of the American landscape. These themes include: the values, perceptions, images, material artifacts, and settlement processes that contributed to shaping the humanized landscape. The themes will be elaborated in a context both historical and regional. Classes will meet twice weekly in separate groups for the regularly scheduled class period. The class period will be extended for joint meetings in alternate weeks for special events including lectures, field trips, and possible films. Short written papers marked by all three professors and class participation will be the basis for grades. The course is listed for credit as Art 279, Geography 279, and English 279. Each course is limited to 15 students.

Ms. Grad, Mr. Conron, Mr. Johnson

Offered every other year

AMERICAN SPORT

A cluster course in the Program of Humanistic Studies. Parallel and overlapping courses in cultural geography, economics, and psychology using common readings, writing assignments, and group meetings in an exploration of various American games as expressions and reflections of American history, character, values, attitudes, environment, self-image, mentality, and economic ethos and institutions. Emphases will include the relationship between the character and structure of the games and their success among different groups of Americans; explanations for the transformation of the games from European and early forms; economic forces influencing the structure of spectator and participatory sports. Athletics, boxing, cricket, baseball, soccer, rugby, football, basketball, hockey, and tennis, among others, will be considered. Classes will meet twice weekly in separate groups for the regularly scheduled class period. The second class period will be extended for joint meetings in alternate weeks for special events (films, trips). Short written papers marked by all three professors and class participation

will be the basis for grades. This course is listed for credit as Geography 196, Economics 196, and Psychology 196. Each course is limited to 20 students.

Mr. Laird, Mr. Puffer, Mr. Bowden

Offered every other year

END OF AMERICA: LOS ANGELES

A cluster course in the Program of Humanistic Studies. The history of Los Angeles—the Western end of American space—embodies better than that of any other city the polemic between traditional and technological notions of the city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit. An exploration of the changing notions of the city and the American attitude toward the culture of cities through close examination of the history, geography, literature, and film associated with Los Angeles. Listed for credit as Comparative Literature 240, Geography 240, and English 237.

Mr. D'Lugo, Mr. Conron, Mr. Bowden

Offered every other year

ANCIENT CITY

A cluster course in the Program of Humanistic Studies. The Greek *polis* (city-state) has played a central role in the development of Western civilization. An exploration of the roots of the Western city, this course examines the various forms that notion takes in literature, theater, philosophy, and visual arts.

Staff

Not offered on a regular basis

CULTURE, SOCIETY AND ECOLOGY

A cluster in the Program of Humanistic Studies and a capstone in urban studies and cultural geography. An examination of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts include primitive, traditional, and modern worlds; stages of economic growth, interaction, and integration; core and periphery; zonation; gradient; ecosystem; rural-urban continuum; and city and country. The course is listed for credit as Geography 245 (City, Space, and Society), Geography 249 (City, Space, and Culture), and Geography 243 (Culture, Ecology and the City).

Mr. Turner, Ms. Hanson, Mr. Bowden

Offered every year

1900: THE MODERN THEME IN EUROPEAN AND AMERICAN CULTURE

A cluster in the Program of Humanistic Studies and a capstone in Comparative Literature. A consideration of nineteenth-century notions of society and community as reflected in literature and the visual arts and the ways in which these values shaped the twentieth-century views of cultural tradition and social thought. The cluster, focusing on a number of centers of creativity (Paris, Berlin, Madrid, Mexico City, and Buenos Aires), will explore patterns of cultural continuity over time, and the opposition to traditional values in artistic and social movements of renovation. Each course within the cluster will concentrate on a specific city as the site of the emerging modern theme. Joint sessions will stress parallel developments of modernism in different cultural areas, the diffusion of certain values from one area to another, and the legacy of modernism in late twentieth-century social and aesthetic thought. Sections in French, German, and Spanish.

Mr. Spingler, Mr. Schatzberg, Mr. D'Lugo

Offered every other year

IN-FORM-ATION: MEANING THROUGH STRUCTURE IN MUSIC, THEATER AND LITERATURE

This course explores the ways in which form creates meaning. A set of common concepts is used to look at qualities of structure in a variety of creative experiences. The goal is to develop in the student the ability to recognize the significance of forms, whether they occur in art or in everyday life. The course assumes that some of the most meaningful insights into a particular subject may be gained by bringing to bear upon it the critical methods of other areas of knowledge. This course is listed for credit as Music 170 and Comparative Literature 170.

Mr. Fuller, Mr. Spingler, Staff

Offered every other year

International Development and Social Change

PROGRAM FACULTY

Leonard Berry, Ph.D., Professor of Geography, Program Codirector; Director, Graduate School of Geography

Richard B. Ford, Ph.D., Program Codirector, Associate Professor of History

Cynthia Enloe, Ph.D., Professor of Government and International Relations

Robert W. Kates, Ph.D., Professor of Geography and Research Professor

David Major, Ph.D., Research Professor of Geography

Harry E. Schwarz, B.C.E., Professor of Environmental Affairs

Ann Seidman, Ph.D., Professor of International Development

Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of History

Stanford N. Hagopian-Gerber, Ph.D., Associate Professor of Anthropology

Robert C. Hsu, Ph.D., Associate Professor of Economics

Douglas L. Johnson, Ph.D., Associate Professor of Geography

Laurence A. Lewis, Ph.D., Associate Professor of Geography

Frank W. Puffer, Ph.D., Associate Professor of Economics

Harry J. Steward, Ph.D., Associate Professor of Geography

Kirsten Johnson, Ph.D., Associate Professor of Geography

Philip O'Keefe, Ph.D., Research Associate Professor

Billie Lee Turner, Ph.D., Associate Professor of Geography

Barbara Thomas, Ph.D., Assistant Professor of International Development, Deputy Program Director, Adjunct Professor of Government

Kent Trachte, Ph.D., Assistant Professor of Government

Sixten Haraldson, Ph.D., Associate Professor of International Development (Affiliate)

Charles Hays, M.D., M.P.H., Associate Professor of International Development (Affiliate)

Linda Ammons, Ph.D., Visiting Lecturer in Anthropology

PROGRAM

International Development and Social Change (ID) is an interdisciplinary program offering courses at the B.A. and M.A. levels and combining research and training activities with course work.

The teaching program is designed to introduce students to the com-

plex issues involved in international development, acquaint them with a range of research activities, and prepare them for careers and participation in international fields. It will attempt to orient majors to the changing world in which we live and to the increasing role developing societies play in the interdependence of the world's social, economic, and political systems. The program hopes to attract a wide range of non-majors in one or more of the courses, seminars, or other international development activities. Students are encouraged to work out a double major with one of the cooperating departments.

The program in International Development, launched at a time of disillusionment and widespread doubt about progress in addressing development problems, requires special explanation. The program does not seek to train agricultural specialists, highway design engineers, or sanitation system contractors. Nor does the program expect a majority of its graduates to work for the established international agencies such as US-AID, the World Bank, or the United Nations. Rather, it assumes that graduates will acquire basic skills of economic and social analysis as well as generalized orientation toward development and social change. These skills and attitudes will be useful for further graduate study and specialization or for any number of careers in either the private or public sector that deal with developing areas of the world.

To attain these skills, students in the program will work in a combined graduate-undergraduate setting which blends the breadth of liberal arts with the specialization of professional training. Thus the curriculum combines existing departmental courses, new cross-disciplinary courses, and applied research activity.

The research program offers faculty and students opportunities to work individually and cooperatively on topics of concern related to international development and social change. Current research projects include problems of the world's least developed nations; the continuing problems of drought and development in eastern, western, and southern Africa; the social and economic impact of desertification; and environmental and resources management in eastern Africa. In all this, we are concerned not only with the relationship between technological intervention, finite resources, and social change in the developing world, but also with relations between the poorer and the more affluent nations. Associated with these collaborative research efforts are seminars, symposia, internships, and summer research activities.

The International Development and Social Change Program is flexible, permitting students to participate in designing their own interdisciplinary curriculum for the study of development problems. It aims to meet the needs of three different groups of students: *First*, it provides one of the few programs in the United States which permits undergraduate students to take a liberal arts B.A. degree focused on development. Students may take international development as a double major in conjunction with a related discipline like geography, economics, government, sociology, or psychology. *Second*, it provides an opportunity for undergraduates who qualify to go on in the program to complete a five year B.A.-M.A. degree with a view to a career in the development field. *Third*, it provides a self-contained program for students coming from other universities who wish to obtain the necessary background and complete an M.A. in order to pursue a career in the development field.

Students should consult the ID staff in planning their individual programs within the overall ID framework.

Students are expected to:

- 1) master basic skills including competence in a foreign language, quantitative skills, and techniques of economic and social analysis
- 2) attain an understanding of the development process in its political, economic, historical, and environmental aspects
- 3) develop an investigation/research approach to an actual problem and attempt to apply the growing body of theoretical knowledge in an internship experience
- 4) wrestle with the problem of hammering out a philosophy of development
- 5) pursue a career track—for example, resource management, or development planning—chosen in consultation with a faculty adviser

Career Tracks

Majors in international development and social change will take at least four courses in a particular field of specialization. Students may follow the pattern set out in one of several established tracks, for example, development planning, resource management, development administration, or health administration. Or a student may design a course sequence, subject to approval by an appropriate faculty member, that creates a new focus. In every case, the area of concentration should be looked upon as an opportunity for students to link their interest in development with a focus in a specialized field.

Course Requirements

1. *Basic orientation:* Majors will take Introduction to Development, Development Economics, and three additional core courses in politics, resource management, and socio-cultural issues. (Students transferring from other majors or universities may substitute equivalent courses.) Unless they otherwise satisfy the prerequisites for Development Economics (with permission of the instructor), they also must take Issues and Perspectives and Principles of Economics.
2. *Track Courses:* Majors will take at least four courses in the track or area of concentration they select in consultation with an ID faculty adviser.
3. *Skills Courses:* Majors will take Social Science Research Methods and two of the following: computer science, statistics, and cartography. They should decide, in consultation with the faculty adviser, which language proficiency would be most helpful for their chosen development area. They may demonstrate language proficiency through proven competence or course work equivalent.
4. *Additional Activities:* In addition to the several formal courses, the International Development and Social Change Program sponsors a number of seminars, symposia, and action projects. Majors are encouraged to participate in these activities.
5. *Graduate Students,* in addition to completing the basic courses outlined above (they may substitute equivalent courses, if they graduated from another university) will be expected to take at least one advanced course in theories of development and three others (including advanced methodology) relating to their career track. They will also participate in an appropriate applied project and write a thesis.

COURSES

015 INTRODUCTION TO ECONOMIC GEOGRAPHY

Theories of the geography of the production of human existence out of nature are presented. The course emphasizes significant economic, social and environmental problems. These include over-population, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and discussing the emergence of a world capitalist economy, culture, and consciousness. Also listed for credit as Geography 015.

Mr. Peet

Offered every year

108 WORLD POPULATION

Is the population of our world growing too fast? Will the world encounter an over-shoot leading to doomsday? To address these questions requires an understanding of the nature of population growth and socio-cultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems are addressed. Also listed for credit as Geography 108.

Mr. Turner

120 INTRODUCTION TO SOCIAL ANTHROPOLOGY

Analysis of non-Western societies with a focus on social structures. The emphasis will be on the development of a comparative perspective and a non-ethnocentric perspective on our own culture. Theoretical and topical interests vary with instructor.

Mr. Hagopian-Gerber

Offered every year

125 DEVELOPMENT PROBLEMS

Designed to introduce students to the major issues and debates in the field of international development, this course addresses a variety of concerns relevant to the Third World including colonialism, development and underdevelopment, growth and equity, trade and aid, North-South relations, emergence of class, and political ideologies. Various approaches to development are explored. The class focuses on specific problems of food, population, and resources, including both trends and policies. Case materials are drawn from a number of countries including India, China, Kenya, Tanzania, Sudan, Mexico, Brazil, and Bangladesh. Also listed for credit as Geography 125, Government 125, and History 125.

Ms. Thomas

Offered every year

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT

Do conventional explanations of underdevelopment strike you as false and unconvincing? A powerful and refreshing alternative perspective exists in Marxist and neo-Marxist theories of social change. This course reviews the main currents within this rich stream including theories of dependency, imperialism, accumulation world systems, unequal exchange, and mode of production. Marxist concepts will be used to examine the international role of capital, multinational corporations,

and regional decline. Finally, the course presents alternative models of socialist development. Also listed for credit as Geography 127.

Mr. Peet, Ms. Johnson

Offered every year

129 LATIN AMERICA: ISSUES AND PROBLEMS

For the most part, North Americans take Latin America for granted. We stereotype its people and neglect to understand the root causes of their problems and aspirations. This course examines some of these problems: rural poverty, the extinction of Indian populations, the subordination of women, agricultural stagnation, and uncontrolled urban growth. In addition, it explores the aspirations embodied in popular mass insurrections ranging from the Mexican revolution to the current conflict in Central America. The course will draw upon geographical and sociological analyses, novels, poetry, films, and journalism. Also listed for credit as Geography 129.

Ms. Johnson

Offered every other year

136 SUB-SAHARAN AFRICA: ISSUES AND PROBLEMS

The course focuses on a variety of issues and problems confronting sub-Saharan Africa. Among topics to be included are the legacy of colonialism, establishment of nation-states, changing production systems, the relationships among food, population, and energy resources and trends, the roles of women in existing economic structures, conflict in the Horn of Africa, relations with South Africa, the role of the OAU, the emergence of class, problems of neo-colonialism and underdevelopment, and strategies for socio-economic change. Readings include contemporary literature, texts of political philosophers, speeches of African leaders, public documents, journals and newspapers, secondary sources, and a variety of audio-visuals to give a multi-dimensional picture of contemporary Africa. Illustrative material is drawn selectively from East, West, and Southern Africa.

Ms. Thomas

Offered every other year

169 INTRODUCTION TO INTERNATIONAL RELATIONS

Refer to course description under Government 169.

Mr. Trachte

175 MANAGEMENT OF ARID LANDS

This course focuses on cultural ecology in arid lands. Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population. Also listed for credit as Geography 177.

Mr. Johnson

Offered every other year

176 COMPARATIVE ECONOMIC SYSTEMS

Many different political and economic systems exist in the world. Most systems are continually undergoing changes that gradually, but importantly, affect their performance. This course surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Mixed economies, market socialist

economies, and centrally planned economies are examined. Also listed for credit as Economics 176.

Mr. Hsu

Offered every year

177 CHINESE POLITICAL ECONOMY

This course is a comprehensive survey of the Chinese economy—its development, institutions, and policies. The major topics to be covered are: 1) Economic Heritage; 2) Maoist and post-Mao Economic Development: Ideologies and Strategies; 3) Rural and Agricultural Development; 4) Industrial Development; 5) Planning and Resource Allocation; 6) Human Resources: Population, Health Care, Education; 7) International Economic Relations. Also listed for credit as Economics 177.

Mr. Hsu

Offered every year

179 HEALTH PROBLEMS AND HEALTH CARE DELIVERY IN THE DEVELOPING COUNTRIES

This course will examine the health care problems of developing societies and will place a special emphasis on the nutritional and population parameters of these problems. It will also examine the relationship of health to political and socio-economic development and will point out some of the successes and failures of health development planning in the past decade. The rural health care delivery systems of selected socialist and capitalist societies will be examined and compared.

Staff

Offered every other year

189 REMOTE SENSING OF THE ENVIRONMENT

This course offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. It covers the use of remotely-sensed data such as air photos and a variety of satellite imagery to provide answers to many of the problems about our physical and human environment. Also listed for credit as Geography 189.

Mr. Steward

Offered every year

201 APPLICATION OF SYSTEMS ANALYSIS TO ENVIRONMENTAL PROBLEMS

Systems analysis as a tool for problem solving is the focus of this course. The fundamental concepts and their application to environmental problems are discussed. Stress is on the use, applicability, and limitations of this method in analyzing complex environmental systems and their physical, social, and economic aspects. Prerequisite: some knowledge of basic algebra. Offered as a half course, first half of semester. Also listed for credit as Environmental Affairs 201.

Mr. Schwarz

Offered every year

202 THE BIOSPHERE

Building on a foundation of general knowledge of physiology, genetics, taxonomy, and ecology, the course will provide a biological context and perspective for the analyses and assessment of man-made environmental hazards. Prerequisite: introductory course in biological science or concurrent registration in such course with permission of instructor. Offered as a half course, second half of semester. Also listed for credit as Environmental Affairs 202.

Mr. Erickson

Offered every year

203 MAN'S PERCEPTION OF HIS ENVIRONMENT

This is an introduction to the study of environmental behavior, examining man's reactions to environmental changes and natural and man-made hazards. Offered as a half course, first half of semester. Also listed for credit as Environmental Affairs 203.

Staff

Offered every year

204 ENVIRONMENTAL PLANNING

This course looks at environmental planning from a broad and general viewpoint. The planning process and some of its major components are examined. A case study serves as one of the vehicles to analyze planning. Offered as a half course, second half of semester. Also listed for credit as Environmental Affairs 204.

Mr. Schwarz, Mr. Major

Offered every year

208 ENVIRONMENTAL COGNITION AND BEHAVIOR

The course will review the theories, methods, and research findings in the field of environmental perception. Particular attention will be given to the development of spatial cognition and to cross-cultural studies in cognition. Also listed for credit as Geography 208.

Ms. Johnson

Not offered on a regular basis

210 ENVIRONMENTAL PROTECTION LAW

This is a free-wheeling discussion of pollution control in the real world; its legal, institutional, and political framework: federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizens suits"; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy versus ecology; old tools, new tools, potential for change. The course includes reading in multilithed materials—statutes and journal articles. Informal student advocacy panels will be utilized.

Staff

Offered every other year

212 WOMEN AND SOCIAL CHANGE

The purpose of this course is to examine the central assumptions and theories about the status and roles of women from a multi-disciplinary, comparative perspective. It examines the roles of women in a cross-national and cross-cultural perspective focusing particular attention on policies and programs affecting women. It looks specifically at issues pertaining to the division of labor between the sexes, questions of class and gender, the household economy, women's roles in economic development, population, education, the internationalization of capital and women's work, women in peasant economies, and women in politics and political organizations. Case studies from a wide variety of settings reflect women's experience in Africa, Asia, the Middle East, Latin America, and North America.

Staff

Offered every other year

216 GEOMORPHOLOGY AND CLIMATOLOGY OF ARID LANDS

An analysis of the landscapes of arid areas of the Earth and the dynamics under which they operate with special relation to the arid southwest section of the United States and the Sahara. Also offered for credit as Geography 216.

Mr. Lewis, Ms. Nicholas

Offered every other year

212 International Development and Social Change

218 DEVELOPMENT AND RESOURCE MANAGEMENT

The world is changing more rapidly than at any time in history. The course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in depth case studies. Also offered for credit as Geography 218.

Mr. Berry, Mr. Lewis

Offered every year

220 ETHNOLOGY: ARMENIAN CULTURE AND SOCIETY

This course is an intensive investigation of Armenian history, politics, culture, social institutions, and religion. Topics to be discussed include pre-history, the role of the Church, the dynasties, the Genocide, and Armenians throughout the Diaspora. Attention is given to important Armenian figures such as Saint Vartan, Saroyan, Issahakian, Zarian.

Mr. Hagopian-Gerber

Offered every year

222 STRATEGIES OF DEVELOPMENT AND CHANGE IN COMMUNIST POLITICAL SYSTEMS

Refer to course description under Government 222.

Ms. Sochor

223 CULTURES OF THE MIDDLE EAST

An ethnographic introduction to current Middle Eastern cultures, emphasizing the great diversity of cultural patterns present there, and analyzing the religious, environmental, political and economic bases for the formation of separate cultural groups.

Ms. Ammons

Offered every other year

224 MAPPING FOR INTERNATIONAL DEVELOPMENT

This course will seek to set the current state-of-the-art/future potential of mapping techniques and technology in an international development context. Lectures and project work will be augmented with field trips to the cartographic sections of relevant agencies, e.g., United Nations, World Bank, Organization of American States. Also listed for credit as Geography 224.

Mr. Steward

Offered every year

225 BLACK POLITICS IN THE UNITED STATES

This course will analyze the distribution of power as it affects the Black community. Among those topics to be explored will be: Black congressmen and lobbies, Black politics in cities, the impact of Blacks on the bureaucracy, and a comparison of Northern and Southern Black politics. Also listed for credit as Government 224.

Ms. Enloe

228 ECONOMIC DEVELOPMENT

This course examines the major theories of economic development, the major problems confronting the less developed countries, and the policies and strategies appropriate for economic development. The purposes are to show the relevance of economics in international development, to promote an understanding of the problems of the less developed countries, and to help provide analytical skills useful to students interested in a career in international development. Also listed for credit as Economics 228.

Mr. Hsu

Offered every other year

230 PASTORALISM IN TRADITIONAL ECONOMIES

"... And Abel was a keeper of sheep, but Cain was a tiller of the ground." (Gen. 4:2). From sacred scripture to more recent images, the people who herd animals for a living have elicited ambivalent reactions, both hostile and romantic, from their sedentary cousins. Close examination of these images exposes the myth and reality of pastoral nomadism in the dry environments of the subtropics and middle latitudes. The history and ecology of pastoralism is investigated through a series of contemporary case studies, and the future of this traditional mode of production in an epoch of development, modernization and environmental change is analyzed. Also listed for credit as Geography 230.

Mr. Johnson Offered every other year

234 WOMEN IN MIDDLE EASTERN SOCIETY

This course will introduce students to the varied, complex roles which women play in Middle Eastern society. The first purpose is to destroy the stereotype of the veiled, secluded Middle Eastern woman, and then to explore the reality primarily through the works of anthropologists studying the Middle East, and through the writings of various Middle Eastern women. Urban, village, and nomadic women will be studied in detail.

Ms. Ammons

Offered every other year

238 ISSUES IN PUBLIC HEALTH

Refer to course description under Biology.
Mr. Reynolds

239 BIOLOGY AND PUBLIC HEALTH: ASPECTS OF WATER POLLUTION

Refer to course description under Biology.

242 THE POLITICAL ECONOMY OF RURAL DEVELOPMENT

This course is designed to introduce students of international development to the critical issues and problems in rural development in the Third World. Among topics to be addressed are approaches to rural development, analysis of different production systems, programs and project design, management and evaluation; equity, growth and welfare issues; and the impact of technology on rural socio-economic systems. The relationship of various government policies to rural development and the linkage between local communities and world economic systems are explored. Illustrative material is to be drawn primarily from Africa and Asia.

Ms. Thomas

244 COMPARATIVE RACE AND ETHNIC RELATIONS

The purpose of this seminar is to enable participants to begin to develop a theoretical framework for analyzing problems of racism and to conceptualize solutions to the problems consistent with the analysis.

Mr. Hagopian-Gerber

Offered every year

249 INTERNATIONAL POLITICAL ECONOMY

Refer to course description under Government 249.
Mr. Trachte

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT

An advanced undergraduate seminar intended to provide an integration of skills and concepts in environmental geography through the exam-

ination of concrete management problems. Also listed for credit as Geography 251.

Mr. Kasperson

Offered every year

256 PROBLEMS IN WATER RESOURCES PLANNING

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: A 200-level course in Environmental Assessment, Physical Geography, Economics, or Science, Technology and Society or permission of instructor. Also offered for credit as Geography 256 and Environmental Affairs 256.

Mr. Schwarz

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION

Introduction to the theory of multiobjective resource evaluation. Presents the full range of criteria required for the economic, social and environmental evaluation of resource programs and projects, together with selected applications. Also listed for credit as Geography 257.

Mr. Major

Offered every year

258 CENTRAL AMERICA: LANDSCAPE EXPERIENCE AND CHANGE

This region is examined in context with the various cultures that have made imprints on its landscapes. The shared and particular values and technologies of Amerind, European, African, and Ladino are traced from the rise of early civilization in the region to modern times. Emphasis is placed on landscape utilization and modification as expressions of each culture's experience. Also listed for credit as Geography 258.

Mr. Turner

Not offered on a regular basis

266 ETHNOLOGY AND DEVELOPMENT IN THE CARIBBEAN

This course will focus upon various problems in the analysis of socio-economic change in the Caribbean culture area.

Mr. Hagopian-Gerber

Offered every other year

267 POLITICAL ANTHROPOLOGY

This course includes an examination of varying levels of socio-political culture. Cultures viewed include hunters and gatherers, contemporary Russian, and selected African societies. A certain amount of attention is given to Caribbean political systems and movements.

Mr. Hagopian-Gerber

Offered every year

268 ECONOMIC ANTHROPOLOGY

A comparative study of tribal and state economic organizations, focusing on the ways in which production, distribution, and consumption are institutionalized cross-culturally. Topics to be considered include the nature of work, the idea of surplus, modes of exchange and distribution, social structure, and political structure.

Ms. Ammons

Offered every other year

271 FIELD METHODS: CONCEPTS AND ISSUES IN ANTHROPOLOGY

This course will deal with theoretical issues in the conduct of anthropological field work, including an intensive survey of the literature, problems and prospects, and instruction in use of tape recording and camera equipment involved in field work. It will include on-site experience, where students will obtain and conduct a limited field research project.

Mr. Hagopian-Gerber

Offered every other year

272 ANTHROPOLOGY OF WOMEN

This course will examine anthropological theories concerning the evolution of sex roles in societies, and then analyze the position of women cross-culturally. The emphasis will be on tribal, peasant, and developing societies.

Ms. Ammons

Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS

About no region of the earth are there such misconceived mystiques as the humid tropics. Mid-latitude biases have led to incorrect assessments of the composition of these wet, hot lands, of traditional uses of them, and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region. Also listed for credit as Geography 276.

Mr. Turner

Offered every other year

277 REGIONAL ECONOMICS

This course examines theoretical and practical aspects of economic development, cyclical changes, and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment, and inequalities in income distribution are considered. Inter-regional input-output tables are emphasized. Prerequisite: Economics 11.

Mr. Puffer

Offered every other year

278 DEVELOPMENT AND APPLIED ANTHROPOLOGY

Anthropology, because of its emphasis on a holistic approach to culture, coupled with participant-observation field experience, is uniquely suited to the analysis and direction of cultural change. The purpose of this course is to develop an anthropological perspective with respect to problems of direction, cultural change, intervention, and "modernization." Areas to be discussed include problems of "applied" theory, unintended consequences of institutional change, and psychological and cultural impediments to modernization. Critical attention will be paid to the ethnocentrism of "development" and modernization.

Mr. Hagopian-Gerber

Offered every year

283 SEMINAR: SUPERPOWERS AND THE THIRD WORLD

Refer to course description under Government 283.

284 LANDSCAPES OF THE MIDDLE EAST

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation

of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Also listed for credit as Geography 284.

Mr. Johnson

Offered every other year

286 AGRICULTURE IN TRADITIONAL ECONOMIES

Subsistence, transitional, and smallholder agriculturalists are the focus of investigation. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on the theories of their change. Also listed for credit as Geography 299.

Mr. Turner

Offered every other year

287 POLITICS, POWER, AND PARTICIPATION: COMMUNITY ACTION IN THE THIRD WORLD

The course focuses on issues of local-level participation in Third World countries in the context of development efforts. It addresses key questions: Who participates? How do people participate and what forms does participation take? It considers such problems as urban bias in development, inequitable distribution of benefits and privileges under conditions of scarce resources, and ways to organize the rural poor. Also listed for credit as Government 287.

Ms. Thomas

Offered every other year

288 DISEASE AND HEALTH SERVICES IN THE THIRD WORLD

This seminar will examine the epidemiology and geographical distribution of several diseases including: malaria, cholera, schistosomiasis, trypanosomiasis, and malnutrition. The relationship of disease extension to environmental changes which are secondary to development activities will also be examined as will some of the different programmatic efforts which have been developed to control these disease problems.

Staff

289 POLITICAL ECONOMY OF DEVELOPMENT

This course will examine the current "state of the art" and debates surrounding differing theories of underdevelopment and their implications for international and regional development. Also listed for credit as Geography 289.

Ms. Johnson

Offered every other year

294 THEORIES OF DEVELOPMENT AND SOCIO-ECONOMIC CHANGE

The purpose of this course is to provide a broad understanding of the major theories of development and socio-economic change. It incorporates the perspectives of a variety of disciplines and applies them to specific policy issues including those related to the international economy, industrialization strategies, the role of the state, distributional issues, technology transfer, population, and urbanization. The approach is both historical and theoretical. Theories from economics, political science, history, geography, sociology, and anthropology which have emerged to explain socio-economic change will be presented. The course is open to juniors and seniors who are ID majors and to graduate students.

Staff

Offered every other year

295 PLANNING FOR DEVELOPMENT

This course will examine alternative approaches to planning for development by looking at their implications for institutional changes and patterns of resource allocation through case studies of selected countries. It will focus particularly on the impact of planning on industrial agriculture, domestic and international trade, finance, and labor use.

Ms. Seidman

Not offered on a regular basis

298 READINGS IN INTERNATIONAL DEVELOPMENT

This seminar will critically evaluate the leading materials relevant to issues of international development. It will seek to give participants a knowledge of alternative theoretical approaches and their applicability to the practical problems of development. Required for ID graduate students.

Staff

Offered every year

299 RESEARCH IN INTERNATIONAL DEVELOPMENT

Variable credit, differing topics, may be associated with International Development research projects. By arrangement.

Staff

Offered every year

302 RESEARCH THESIS

Master's degree candidates may register for Thesis Research while working on their master's degree research thesis. Offered for variable credit. Only one credit from ID 302 will be counted toward the M.A. degree requirement.

Staff

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY

The seminar is designed for thesis- and dissertation-level students working in the areas of resources, development, and environmental cognition, who are developing proposals or preproposal research papers. The seminar will provide a forum for discussion, criticism, and practical advice. Also listed for credit as Geography 310.

Mr. Turner

Offered every year

358 PROFESSIONAL SEMINAR IN RESOURCE PROJECT EVALUATION

This seminar will cover best-practice applied methods of resource project evaluation as suggested by current research, the procedures of the World Bank and leading U.S. resource agencies. The intent of the seminar is to bring advanced students to a level of preparation adequate for professional work in resource project evaluation. Also listed for credit as Geography 358.

Staff

Offered every year

For additional courses related to International Development, refer to the following History Department listings:

120 AMERICA AND THE WORLD

Refer to course description under History.

Mr. Billias, Mr. Little

177 LATIN AMERICAN HISTORY

Refer to course description under History.

Mr. Little

218 International Development and Social Change

179 THE HISTORY OF TRADITIONAL AFRICA

Refer to course description under History.

Mr. Ford

180 HISTORY OF MODERN AFRICA

Refer to course description under History.

Mr. Ford

181 CHINA 1840–1949: A GREAT TRADITION IN TRANSFORMATION

Refer to course description under History.

Ms. Gottschang

182 MODERN CHINA

Refer to course description under History.

Staff

279 PROSEMINAR: LATIN AMERICA REVOLUTION, REFORM AND REACTION

Refer to course description under History.

Mr. Little

283 CLIMATE AND HISTORY: ANALYSIS OF THE INFLUENCE OF CLIMATE ON HISTORICAL CHANGE

Refer to course description under History.

Mr. Ford

284 CLIMATIC HISTORY AND DEVELOPMENT

Refer to course description under History.

Mr. Ford

285 PROSEMINAR: THE MULTINATIONAL CORPORATION

Refer to course description under History.

Mr. Little

286 CITIES IN AFRICA

Refer to course description under History.

Mr. Ford

291 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

Refer to course description under History.

Mr. Trachte

International Relations

PARTICIPATING FACULTY

Douglas Little, Ph.D., Program Codirector, Assistant Professor of History

Kent Trachte, Ph.D., Program Codirector, Assistant Professor of Government

Daniel R. Borg, Ph.D., Associate Professor of History

Paul Lucas, Ph.D., Associate Professor of History

Zena Sochor, Ph.D., Assistant Professor of Government
Roger Van Tassel, Ph.D., Professor of Economics
Theodore H. Von Laue, Ph.D., Jacob and Frances Hiatt Professor of
European History
Robert Hsu, Ph.D., Associate Professor of Economics
Robert Ross, Ph.D., Associate Professor of Sociology

INTERNATIONAL RELATIONS CONCENTRATION

Clark's International Relations Program (IR) constitutes neither a department nor a major but rather a concentration or a subfield within two existing majors, history and government. Recent developments in world affairs have broken down the old disciplinary boundaries between diplomatic history and international relations, making an interdisciplinary approach essential. The IR core curriculum consists of a series of seven interrelated courses, designed to provide an integrated framework for understanding international affairs from historical, political, and economic perspectives.

Requirements:

A. A student wishing to pursue a history concentration or a government subfield in international relations must take a *core cluster* consisting of the following three courses:

- | | |
|-------------------|---|
| 1. Government 169 | Introduction to International Relations |
| 2. History 238 | U.S. Foreign Relations Since 1914 |
| 3. Economics 108 | International Financial Developments |

B. In addition, IR students must choose *one of the following two analytical clusters*—world economics or comparative diplomacy—consisting of three courses:

World Economics

- | | |
|-------------------|---------------------------------|
| 1. Government 249 | International Political Economy |
| 2. History 125 | International Development |
| 3. Sociology 257 | Comparative Urbanization |

Comparative Diplomacy

- | | |
|-------------------|----------------------------------|
| 1. Government 179 | Comparative Foreign Policy |
| 2. History 190 | Twentieth Century Global History |
| 3. Economics 176 | Comparative Economic Systems |

C. Finally, IR students must take a *capstone seminar* related to their analytical cluster. Examples of suitable capstone seminars include Government 283 (Superpowers in the Third World), History 285 (Proseminar on the Multinational Corporation), and Government 289/History 291 (Advanced Topics in International Relations).

D. IR students should bear in mind that they must fulfill the other existing requirements for their respective majors. IR students should also note that Economics 10 is a prerequisite for all 100-level economics courses.

Judaic Studies

PARTICIPATING FACULTY

Barbara Geller Nathanson, Ph.D., Assistant Professor and Director of
Judaic Studies

Paul Burke, Ph.D., Associate Professor of Classics
Stanley M. Davids, M.H.L., Lecturer in Biblical Studies
Moshe Waldoks, M.A., Lecturer in Judaic Studies and History

The following courses in Judaic studies are offered in the Departments of History and Foreign Languages and Literatures. For course descriptions check the course listings under those departments. For further information concerning the Judaic Studies Program and to discuss the possibility of integrating Judaic studies courses within various departmental majors, or to develop a concentration in Judaica, contact Ms. Nathanson.

HEBREW LANGUAGE AND LITERATURE COURSES (See Department of Foreign Languages and Literatures.)

11 ELEMENTARY HEBREW

Refer to course description under Hebrew.
Ms. Nathanson

12 INTERMEDIATE HEBREW

Refer to course description under Hebrew.
Mr. Waldoks

13 ADVANCED INTERMEDIATE HEBREW

Refer to course description under Hebrew.
Mr. Waldoks

130/131 ADVANCED HEBREW

Refer to course description under Hebrew.
Ms. Nathanson, Mr. Waldoks

HEBREW LITERATURE/JUDAIC STUDIES COURSES CONDUCTED IN ENGLISH

119 THE PENTATEUCH

Refer to course description under Hebrew.
Mr. Davids

120 THE PROPHETS OF ISRAEL

Refer to course description under Hebrew.
Mr. Davids

122 THE EVOLUTION OF JEWISH LITURGY

Refer to course description under Hebrew.
Mr. Davids

160 MODERN ISRAELI LITERATURE

Refer to course description under Hebrew.
Mr. Davids

170 IMAGES OF THE JEW IN LITERATURE, ART AND POPULAR CULTURE

Refer to course description under Hebrew.
Ms. Nathanson

HISTORY

173 INTRODUCTION TO THE HISTORY AND CULTURE OF ANCIENT ISRAEL

Refer to course description under History.

Ms. Nathanson

174 THE JEWISH EXPERIENCE

Refer to course description under History.

Ms. Nathanson

223 THE AMERICAN JEWISH EXPERIENCE: A HISTORY OF JEWS IN THE UNITED STATES

Refer to course description under History.

Mr. Waldoks

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Ms. Nathanson

274 RABBIS, ROMANS AND RUINS

Refer to course description under History.

Ms. Nathanson

275 HISTORY AND CULTURE OF EASTERN EUROPEAN JEWRY

Refer to course description under History.

Mr. Waldoks

276 MODERN JEWISH INTELLECTUAL HISTORY

Refer to course description under History.

Mr. Waldoks

277 HISTORY OF ZIONISM AND THE RISE OF ISRAEL

Refer to course description under History.

Ms. Nathanson

278 HOLOCAUST: THE DESTRUCTION OF EUROPEAN JEWRY (1933–1945)

Refer to course description under History.

Mr. Waldoks

CLASSICS

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics.

Mr. Burke

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Ms. Nathanson

274 RABBIS, ROMANS AND RUINS

Refer to course description under History.

Ms. Nathanson

222 Judaic Studies

Linguistics and Language Learning

PARTICIPATING FACULTY

James Macris, Ph.D., Professor of English and Linguistics, Program Director

Helen J. Kenney, Ed.D., Professor of Education

Walter Schatzberg, Ph.D., Professor of German

GRADUATE PROGRAM

The Program in Linguistics and Language Learning leads to an M.A. degree with two distinct degree options: an M.A. in linguistics and an M.A. in education. The latter degree has three concentrations:

- 1) the teaching of English as a foreign language
- 2) the teaching of modern foreign languages (French, German, Hebrew, Russian, and Spanish)
- 3 bilingual/bicultural education

Foreign Language Requirement

Students who intend to teach foreign languages already should have a good command of one foreign language and at least a reading knowledge of a second. Those enrolled in the M.A. program in linguistics should have done at least three years of college work on one foreign language.

Individuals who lack this requirement may arrange to meet it while they are enrolled in the program. Alternative means of meeting the requirement may be arranged by consultation.

M.A. Thesis or Alternative Requirement

Students who are taking the M.A. degree in linguistics must write an acceptable thesis. Those taking the M.A. degree in education must complete a long project, write a long analytical paper, or write an acceptable thesis.

COURSES

20 ENGLISH AS A SECOND LANGUAGE I

This course is designed primarily to improve speaking and writing skills of less advanced foreign students through individual instruction. Some attention is paid to reading and to aural comprehension. Methods and exercises are suited to the needs of each student as determined in an individual evaluation by the instructor at the beginning of the semester.

Staff

Offered every semester

21 ENGLISH AS A SECOND LANGUAGE II

This course is designed primarily to improve speaking and writing skills of more advanced foreign students through individual instruction. Some attention is paid to reading and to aural comprehension. Methods and exercises are suited to the needs of each student as determined in an individual evaluation by the instructor at the beginning of the semester.

Staff

Offered every semester

88 DIRECTED READINGS

Offered for variable credit.

Staff

Offered every semester

89 DIRECTED WRITING

Staff

Offered every semester

90 SPECIAL PROJECTS

Offered for variable credit.

Staff

Offered every semester

114 GENERAL PHONETICS AND PHONEMICS

Phonetics is the scientific study of all the physical aspects of speech. Phonemics treats of the systematic nature of the use of the physical means to form the communication systems we call languages. This course is concerned with language in general, so as to provide the theoretical framework necessary for describing the pronunciation system of any language. It includes the fundamentals of articulatory and acoustic phonetics, and it proceeds to general structural phonemics and some of its modifications and the theoretical questions raised by them. Prerequisite: permission of instructor. This course, or its equivalent, is a prerequisite to Linguistics 260 (Linguistics and Language Learning). The instructor is prepared to suggest alternative ways of meeting the prerequisite, however.

Staff

Not offered on a regular basis

115 MAN AND LANGUAGE

This is an introduction to the analysis of nature and function of human language and its role in the life of individuals and societies. The approach is interdisciplinary, with attention to the points of view of philology, contemporary linguistics, anthropology, psychology, and philosophy. The lectures focus on such questions as: What is language? What is the relation between language and thought? To what extent does our language determine how we perceive the world? Why and how do languages change? What other functions does language serve besides communication? Why do we not have a world language? How have linguists achieved an objective, scientific analysis of linguistic systems? What are the limitations of such a science? The course is designed for the general student who wishes to know more about the nature of the uniquely and universally human institution of language and for the student or teacher of English or foreign language who is interested in the light linguistic science can throw upon the relations between his or her field and other areas of life and knowledge. Prerequisite: permission of instructor.

Staff

Not offered on a regular basis.

192 LANGUAGE IN SOCIAL CONTEXT

This is a look at language from the perspective of sociolinguistics. The course will view spoken discourse as situated action, whose meaning both reflects and creates the social context in which it takes place, whether in the everyday world or the world of the literary text. Starting with the notion of speech communities, the class will consider how verbal performance varies as individuals and groups assume different roles in different situations. Topics will include ritualized speech events, linguistic subcultures, male-female language, code-switching, bilin-

gualism, and functions of language in the classroom. Discussion and reading will be supplemented by several short observational tasks. The class is limited to 20 students. Also listed for credit as Comparative Literature 192 and Education 192.

Ms. Nigrosh

Not offered on a regular basis

260 LINGUISTICS AND LANGUAGE LEARNING

This is an exploration of various fields of linguistic study from the point of view of their relevance to foreign language learning. Intended to meet the needs of two classes of students: 1) prospective foreign language teachers who already have advanced mastery of their foreign language and 2) other students with a more general interest in the nature of language, whose primary orientation may be toward related problems in, for example, psycholinguistics or sociolinguistics. Approaching language as *behavior* and as *system*, the course directs attention to the levels ranging from the cultural system to the system of the language as a whole and finally to its subsystems: lexical, grammatical, and phonological. Prerequisite: Linguistics 114, which may be taken either prior to or concurrently with this course, and for which substitutes may be available if the instructor is consulted well in advance; permission of instructor. Also listed for credit as Education 260.

Staff

Not offered on a regular basis

281 THE DEVELOPMENT OF THE ENGLISH LANGUAGE, I & II

The first semester (I) deals with the development of the phonology and lexicon of English, viewed as a dynamic series of systems. The course also describes the homeland, language, and culture of the Proto-Indo-Europeans as background for a treatment of the structural relationships between English and other languages of the Indo-European family. The second semester (II) concentrates on the development of the grammar of English, also treated dynamically and systemically. The course includes an analysis of the establishment of Standard British English, the doctrine of correctness, and the growth of Modern American English in its sociocultural setting. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

285 SEMANTICS

This course studies meaning. It deals with and classifies the changes in the meanings of words and phrases, and it analyzes simile and metaphor. It also deals with the parametric organization of the semantic system. Some attention is paid to the relation between thought and language. Prerequisite: permission of instructor.

Mr. Macris

Offered every year

286 SEMINAR: LINGUISTIC APPROACHES TO LITERATURE

This is a study of what modern linguistics has to offer in the analysis and criticism of literature, with special attention to the contributions of the transformational-generative, tagmemic, and parametric approaches. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

287 INTRODUCTION TO LINGUISTICS

This course is devoted to the theory and methodology of descriptive linguistics. It deals with the nature and function of language, animal communication, the relation between speech and writing, phonology,

morphology, syntax, lexicology, the sociocultural setting of language, the contact of linguistic systems, and the problems of "correctness." Emphasis is placed upon the dynamics of systems analysis. Prerequisite: permission of instructor.

Mr. Macris

Offered every year

288 COMPARATIVE AND HISTORICAL LINGUISTICS

This course examines the theory and methodology of comparative and historical linguistics. It focuses on problems in analyzing languages with and without a literary tradition, the comparative method and reconstruction, glottochronology, linguistic borrowing, and linguistic geography. Emphasis is placed on the dynamics of systems analysis. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

289 SIGN LANGUAGE: THEORY AND PRACTICE

This course analyzes the origins and linguistic aspects of signs in American Sign Language. The students develop expressive/receptive use of American Sign Language vocabulary in English word order, as well as of American Sign Language idioms. Intended for students interested in such fields as primate communication and the teaching of the deaf.

Staff

Not offered on a regular basis

290 DIRECTED RESEARCH

This is a semi-independent study of an approved topic under the direction of a faculty member. Prerequisite: permission of instructor.

Staff

Offered every semester

295 TEACHING ENGLISH AS A SECOND LANGUAGE

This course covers the principles and practice of second-language teaching, with emphasis on the application of modern linguistics to the teaching of English as a second language. Prerequisite: permission of instructor. Also listed for credit as English 295 and Education 265.

Mr. Macris

Offered every year

350 MASTER'S THESIS

Prerequisite: consent of program director.

Staff

Offered every semester

388 GRADUATE DIRECTED READINGS

Offered for variable credit.

Staff

Offered every semester

The following courses are recommended to students interested in linguistics and language learning:

English 282 OLD ENGLISH

Refer to course description under English.

Mr. Macris

English 284 SEMINAR: MODERN AMERICAN ENGLISH

Refer to course description under English.

Mr. Macris

Management

GRADUATE SCHOOL OF MANAGEMENT FACULTY

Peter P. Gil, Ph.D., Professor of Management, Dean of the Graduate School of Management

Gary N. Chaison, Ph.D., Associate Professor of Management

Harold T. Moody, Ph.D., Associate Professor of Management

William Naumes, Ph.D., Associate Professor of Management, Director of the Small Business Development Center

Mark S. Plovnick, Ph.D., Associate Professor of Management, Associate Dean of the Graduate School of Management, M.B.A. Program Director

Patricia M. Anderson, Ph.D., Assistant Professor of Management

Robert C. Bradbury, Ph.D., Assistant Professor of Management, M.H.A. Program Director

Young Chae, Ph.D., Assistant Professor of Health Administration

Jessica R. Jenner, Ph.D., Assistant Professor of Management

Thomas W. Landers, M.B.A., C.P.A., Assistant Professor of Management

Alan C. Simpson, Ph.D., C.F.A., Assistant Professor of Management, Coordinator: Undergraduate Programs in Management

Maurry Tamarkin, Ph.D., Assistant Professor of Management

Martin R. Moser, M.A., Instructor in Management

Donald E. Fries, M.B.A., J.D., Lecturer in Management

Margaret Naumes, Ph.D., Lecturer in Management

Jerome L. Langer, M.B.A., Lecturer in Management

Affiliated Faculty

Robin J.O. Catlin, M.B., L.R.C.G.P., Professor and Chair of Department of Family and Community Medicine, University of Massachusetts Medical School

John T. O'Connor, Ph.D., Professor of Health Administration, Worcester Polytechnic Institute

Barry S. Levy, M.P.H., M.D., Associate Professor, Department of Family and Community Medicine, University of Massachusetts Medical School

Carolyn E. Cotsonas, J.D., Assistant Professor, Department of Family and Community Medicine, University of Massachusetts Medical School

Michael A. Godkin, Ph.D., Assistant Professor, Department of Family and Community Medicine, University of Massachusetts Medical School

Gale L. Kelly, Ph.D., Assistant Professor, Department of Family and Community Medicine, Associate Provost/Dean for Allied Health, University of Massachusetts Medical School

UNDERGRADUATE PROGRAMS IN MANAGEMENT

The Graduate School of Management offers two programs to undergraduates: the undergraduate major and the Five-Year B.A./M.B.A.

Program. The program descriptions follow. Students with additional questions should contact Alan C. Simpson, coordinator of undergraduate programs in management. Students with questions concerning the M.B.A. Program should refer to the Clark University M.B.A. catalog.

FIVE-YEAR B.A./M.B.A. PROGRAM

The Graduate School of Management offers undergraduate students the option of participating in a five-year program while at Clark. In this program they may earn a B.A. in their major, as well as the M.B.A. degree. The major features of the program are:

- 1) an undergraduate major in any of the liberal arts disciplines at the University. Business/management is not acceptable as a major for this program.
- 2) a series of undergraduate courses in management which can be used as electives or as preparatory courses for the graduate M.B.A. program
- 3) a working internship off campus to bridge theory and practice, normally during the junior year
- 4) graduate courses, beginning in the senior year, which can lead to the M.B.A. degree, and which help prepare students for management positions in business, government, and nonprofit organizations

The five-year program is designed to meet several needs expressed by students today. First, it provides a series of undergraduate courses for students who would like to know something about the field, whether they intend to pursue such a career or are interested in better understanding the society in which they live. Second, these same courses can serve as preparatory courses for many M.B.A. programs across the country, including the Clark University M.B.A. Program. Third, an internship provides needed field experience before a student enters graduate school. Fourth, the total time required by many students who want to pursue both a liberal arts major and a graduate M.B.A. degree can be reduced to a minimum.

The program is designed to provide education which will give both the preparation for immediate employment and the potential for growth toward important positions in organizations. Ultimately, the program is an attempt to bridge the gap between liberal arts education and practical applied learning.

The Program

The program is a carefully designed sequence of educational and work experience, which involves each student from the freshman year through the graduate year. Although it is possible to begin the program as a sophomore, the demands of the program are such that only those who begin early in their college careers may be able to complete all requirements within five years.

Briefly, the program involves five sets of learning experiences:

- 1) a sequence of four undergraduate management courses in the freshman, sophomore, and junior years preparing students for an off-campus internship
- 2) related courses in other departments in economics, statistics, computer programming, psychology, and mathematics, which contain the tools needed for the graduate courses in management
- 3) an off-campus internship lasting six months, earning four credits, where work experience can be gained

- 4) graduate management courses taken in the senior year
- 5) completion of the graduate program during the fifth year

Advising of Students and Entrance into the Program

Students must plan their courses carefully during their undergraduate years in order to complete both the requirements for their major and for the M.B.A. Program in the time provided. Alan Simpson, the program's undergraduate adviser, is available to help and advise any students interested in the Five-Year B.A./M.B.A.

Entrance into the program occurs at the end of the sophomore year. Interested students submit an application to the Graduate School of Management for participation in the Five-Year Program during the spring term of the sophomore year. As part of the application process, students are required to take the Graduate Management Admission Test (GMAT). If the application is approved, students will be conditionally accepted upon their successful completion of the B.A. degree. Accepted students enroll in Management 208, Cases in Management, in the fall semester of their junior year. Arrangements are made for internships through this class, and students work on internships during the spring semester of their junior year.

To summarize, students are accepted into the M.B.A. program after the sophomore year, continue taking undergraduate courses and the internship in the junior year, and begin taking graduate courses in the senior year.

The Internship

Each internship is a carefully matched experience between a student and a work situation in the management community. Internships will normally occur during the junior year and will typically involve six months of work experience (spring semester and a summer). The internship is counted as an academic experience for one full semester of four credits.

The Graduate School of Management arranges job placement and oversees students while on the job. Students are provided introductory material to their internships in Management 208 and are able to share the experiences of students currently involved in internships. During Management 208, arrangements are made for each internship. Finally, while in the internship, student interns are also involved in seminars to enrich their learning experience.

A written project based on the student's experience in the internship is required for the successful completion of the academic credit. This paper, as well as the work experience itself, is under the direction of faculty members.

Summary of Requirements:

- 1) Eight undergraduate courses in management—100, 201, 203, 208 and an internship (4 credits)
- 2) Five related courses—Economics 10, 11, 122, 160, and Computer Science 101
- 3) Thirteen M.B.A. courses—five as an undergraduate following the internship, eight as a graduate including electives and thesis/directed research
- 4) A major applied research project

Sample Schedule

An example of a schedule an economics major could pursue:

<u>Year</u>	<u>Fall Semester</u>	<u>Spring Semester</u>
Freshman	CSCI 101 ECON 10 Elective Elective	MGMT 100 ECON 11 Elective Elective
Sophomore	ECON 121 ECON 205.1 Elective Elective	ECON 122 ECON 205.2 ECON 160 Elective
Junior	MGMT 203 MGMT 208 MATH 120 ECON elective	Internship (4 credits)
Senior	MBA 310 MBA 340 ECON Elective Elective	MBA 330 MBA 343 MBA 350 ECON elective
Fifth year	MBA 337 MBA 341 MBA 362 MBA 398	MBA 342 MBA 345 MBA 360 MBA 398

UNDERGRADUATE MAJOR IN BUSINESS/MANAGEMENT

Students interested in a career in management immediately after graduation, whether in a profit or nonprofit organization (business, government, education, health care delivery, religious institution, etc.), should consider business/management as an undergraduate major. The major offers students the opportunity to develop skills useful for a career within the framework of a liberal arts education; with both educational breadth and practicality, the major offers important advantages.

Skills useful for a career or for additional training are developed at the same time as the student acquires the educational breadth and depth essential for personal and professional growth. The major draws upon a variety of disciplines and, therefore, provides a program that is practical as well as broadly educational. Such a program includes required and optional courses drawn from the offerings of a number of academic departments. Enrollment in the business/management major is limited and is based on performance in the freshman and sophomore year courses. Students apply for admission to the major at the end of their sophomore year.

Within the general requirements of the program, and consistent with the concept of the extended major, students may wish to concentrate their interests in particular offerings that relate to aspects of management meeting their needs and interests. For example, computer science, mathematics, statistics, and accounting electives provide a basis for a career in the data processing, planning, and related specialties; psychology, sociology, philosophy, and government stress human behav-

ior in a social context; courses in STS and environmental affairs or international development further an awareness of issues and skills useful in managing public and private responses to important issues; language and literature courses help develop the skills in oral and written communication essential in virtually all aspects of management.

While students may extend their interests in any of the above directions, it should be noted that the general thrust or bias of the program is a humanistic one. This emphasis stems from the following considerations:

- a) the University's desire to place the program well within the liberal arts framework.
- b) a commitment to the idea that management, after all, is "getting things done through *people*."

Business/management at Clark offers students a vocational emphasis providing the necessary prerequisites for a job placement with a bachelor's degree. Students interested in graduate study toward a master of business administration degree are encouraged to major in an area other than business/management and to consider the Five-Year B.A./M.B.A. Program.

A student's required courses for completion of the management major are those that were in effect at the time he/she was accepted into the Management Program. Students are accepted into the program between their sophomore and junior years. The requirements that follow apply to those students accepted into the major in 1982. For a current listing of requirements, contact the Graduate School of Management.

Core-related courses for all majors: (Note: These courses should be taken approximately in the order listed. Some courses are cross-listed.)

FRESHMAN AND SOPHOMORE LEVEL

Economics 10, Issues and Perspectives

Economics 11, Principles of Economics

Computer Science 101, Introduction to Computer Programming

Management 201, Principles of Accounting, or Economics 121, Introduction to Accounting Principles

Economics 160, Introduction to Statistical Analysis

JUNIOR LEVEL

Management 203, Managerial Accounting

Management 210, Management and Behavioral Principles

Management 230, Marketing Management

Management 240, Corporate Finance

Management 250, Operations Management

Philosophy 133, Business Ethics

SENIOR LEVEL

Management 260, Business Policy

Management 278, Business Law

Track requirements for all majors: Students must, by the first semester of their junior year, declare themselves as pursuing tracks A, B, C, or D within the major. Four courses from a track are required for completion of the major. The tracks are: Economics and Finance, Public Sector Management, Human Resource Management, Quantitative Analyses for Management.

A. *Economics and Finance*

Management 242, Investments, plus three of the following:

1. Economics 113, Monetary Economics: Theory and Policy
2. Any 200-level economics courses.

B. *Public Sector Management*

Any four of the following:

1. Government 109, Introduction to Public Policy and Administration
2. Economics 126, Public Policy Toward Business
3. Economics 215, Public Expenditures
4. Sociology 246, Social Planning and Social Policy
5. *MPA 320, Policy Analysis
6. *MPA 330, Public Budgeting
7. *MPA 350, Public Administration in the American Democracy
8. *MPA 393, Issues and Cases in Public Administration.

*available only to seniors, with permission.

C. *Human Resource Management*

Management 225, Human Resource Management and Management 226, Industrial Relations; plus three of the following:

1. Psychology 170 or Psychology 172, Introduction to Social Psychology or Psychology of Personality. (Both cannot be taken for the track.)
2. Psychology 201 or Psychology 206, Laboratory in Social Psychology or Laboratory in Personality. (Both cannot be taken for the track.)
3. Sociology 282, Industrial Sociology.
4. Sociology 291, Small Group and Interpersonal Processes
5. Psychology 221, Research in Social Psychology
6. Psychology 244, Seminar in Motivation

D. *Quantitative Analyses for Management*

Computer Science 102, Computer Applications plus three of the following:

1. Mathematics 119, Linear Programming
2. Mathematics 120, Calculus, Part I
3. Mathematics 247, Operations Research
4. Computer Science 103, Introduction to COBOL Programming
5. Computer Science 203, Advanced COBOL Programming
6. Economics 265, Basic Econometric Theory

COURSES

100 SURVEY OF MANAGEMENT

A one semester course, offered each semester, as a survey of management theories and practices. It examines the functions of management, such as marketing, finance, operations, and information systems, and it deals in the human side of management, such as personnel, work group formation, and organization development.

Staff

Offered every semester

201 PRINCIPLES OF ACCOUNTING

Elements of generally accepted accounting procedures are presented for several major types of institutions, such as business, government,

educational, and health. This course may be considered the equivalent of Economics 121, Introduction to Accounting Principles; both courses cannot be taken for credit.

Staff Offered every year

203 MANAGERIAL ACCOUNTING

This advanced course emphasizes accounting from the management perspective. Students learn principles of managerial decision making when using accounting information. Prerequisite: Management 201.

Staff Offered every year

208 CASES IN MANAGEMENT

This one-semester course provides an overview of the management decision making which interrelates all of the functional and behavioral areas, using a case approach. While in this course, students will meet with current interns to discuss their experiences and learning processes in work environments. Finally, students consider, evaluate, and select an internship in this course, if desired. This course normally is required prior to taking an internship. Prerequisites: Management 100, Economics 10 and 11, Management 201 and 202.

Staff Offered every year

210 MANAGEMENT AND BEHAVIORAL PRINCIPLES

The course concerns general principles of management, with a special emphasis on the behavior of people in an organizational context. Topics include principles of organization, decision making, leadership, motivation and rewards, job satisfaction, and appraising employee performance.

Staff Offered every year

212 INDUSTRIAL PSYCHOLOGY

A survey of major topics in the area of industrial/organizational psychology including, but not limited to: selection and placement, appraisal, motivation, productivity and job satisfaction, tests and measurement, group dynamics, organization development and change. Prerequisite: Management 210.

Staff Offered every year

225 HUMAN RESOURCE MANAGEMENT

This course will cover the general areas of human resource management, to include job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO, OSHA requirements, manpower planning, and women in management.

Staff Offered every year

226 INDUSTRIAL RELATIONS

An introduction to the concepts, theory, and practice of labor-management relations. Topics covered include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations.

Staff Offered every year

230 MARKETING MANAGEMENT

This course surveys the role of marketing in business and society, focusing on specific marketing activities. Topics include the marketing

environment, marketing research and information systems, consumer behavior, the organizational consumer, policy, pricing, distribution, promotion, international service, and nonprofit marketing. Prerequisites: Economics 10 and 11, Management 201, and Statistics.

Staff

Offered every year

231 MARKETING RESEARCH

Marketing research focusing on consumer behavior and retail advertising. Topics include: primary and secondary data collection; questionnaires for attitude and awareness surveys; mail, phone, and personal interviews; focus groups. Data analysis using techniques from the statistics prerequisite. Prerequisite: Management 230.

Staff

Offered every year

240 CORPORATE FINANCE

This course is a comprehensive study of financial decision making from the perspective of the internal financial manager. Topics covered include both the varied sources of financing and the efficient allocation of resources. The main format is the use of accounting data to implement economic models. Prerequisites: Economics 10 and 11, Management 201, Statistics.

Staff

Offered every year

242 INVESTMENTS

This course will cover investment principles, market behavior, and investment strategy. Investment principles will include: portfolio selection, fundamental analysis, portfolio theory; debt instruments and money markets; the stock option market; and alternative investments. Prerequisite: Management 240 or Economics 122.

Staff

Offered every year

250 OPERATIONS MANAGEMENT

This course will survey techniques in the area of model building and operations research. Emphasis will be on topics oriented toward business forecasting as well as rational decision making by managers. Topics will include forecasting, inventory control, system reliability, waiting-line theory, and assembly-line balancing. Prerequisites: Economics 10 and 11, Management 201 and a course in statistics.

Staff

Offered every year

260 BUSINESS POLICY

This capstone type course should be taken during the senior year. Business Policy focuses on those general management skills involved in choosing the strategy (or goals and purposes) of organization and in committing critical resources to the organization's goals. The course integrates the major management functions, viewing the organization not only as an organic entity comprising a system in itself, but also "impacting" on and "impacted" by its environment. The method of instruction will be case study. Prerequisites: Management 210, 230, 240, and 250.

Staff

Offered every year

278 BUSINESS LAW

The course examines the legal framework within which American business operates. It is concerned with the various laws that determine the

rights and obligations of persons taking part in business transactions. Emphasis will be on those areas of the law commonly encountered by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. The goal will be to provide students with a basis and understanding of the business and legal environment which will guide future management decisions and inquiry. There will be assigned textual readings and class discussion of cases selected to illustrate these topics.

Staff

Offered every year

199 INTERNSHIP

Offered for variable credit.

299.9 INTERNSHIP—FIVE-YEAR PROGRAM

The five-year program requires a four (4) credit internship in the spring semester of the junior year.

Staff

THE GRADUATE M.B.A. PROGRAM

The M.B.A. Program has unique features, which should be evaluated by prospective students in light of their interests and preferences. First, only the most important topics in the study of management are included: marketing, finance, operations management, and organization behavior. These topics are applied to a wide variety of organizations. Second, to complete the graduate program, students must create a part of their program in conjunction with the faculty, administration, and other students. Third, the M.B.A. program is not solely committed to the study of business organizations. The faculty believes the study of management applies to all organizations, nonprofit as well as profit. Consequently, the theoretical core of each field of study is emphasized, and descriptive institutional material is used to particularize the core. The mix of students in the program, including current and future managers of educational, health, religious, government, and business organizations, forces the faculty to focus on the universal principles of managing. Fourth, graduate courses and seminars are scheduled in the late afternoons and evenings. These hours do not mean it is an evening program for part-time students, with a separate program in the daytime for full-time students. It is one program, with both part- and full-time students attending the same courses, seminars, and special projects. This aspect of the program contributes a unique atmosphere in which students learn from each other's wealth of different practical and academic experience.

The M.B.A. Program requires 16 graduate credits for the degree, equivalent to four semesters of full-time graduate study. The 16 credits are organized into four categories of course work and independent study (courses meet for 14 weeks, three hours a week, unless otherwise indicated):

1) *Required Background Courses*—These courses are designed to introduce students to the fundamental language, concepts, and skills underlying the traditional or core functional fields of management. Students with previous course work or experience in these areas may elect to waive these courses by taking and passing waiver exams.

MBA 301, Managerial Accounting and Finance

MBA 302, Quantitative Methods

MBA 303, Managerial Economics

In addition to taking the courses, students must have a basic knowledge of computer programming. This requirement may be met by taking a noncredit, short computer course or by passing a waiver exam. Students who have already completed a computer programming course are considered to have met the requirement.

2) *Required Core Management Courses*—These courses are intended to provide students with basic background knowledge and skills in several important functional areas in Management.

MBA 310, Organization Behavior

MBA 330, Marketing Management

MBA 340, Financial Management

MBA 350, Operations Management

MBA 362, Corporate Social Responsibility

3) As a capstone course for the M.B.A., Business Policy (MBA 360) or Small Business Management (MBA 361) is required.

4) *Electives*—These courses are designed to meet three objectives: They focus students more intensively on advanced topics in a particular functional area (e.g., Marketing Research), or they provide students an opportunity to integrate previous course work by applying their knowledge/skills to a particular problem area (e.g., Small Business Management), or they provide students an opportunity to explore important related topics in management (e.g., Legal Aspects of Management).

5) *Required Research Projects*—Students are required to engage in some form of faculty-supervised independent study in management in order to demonstrate their ability to apply management concepts and techniques to management problems. This research may take the form of empirical scientific studies; comprehensive case analyses; development of quantitative models for forecasting and inventory control, comprehensive review of previous work in some managerial area, or some other approved project.

Research must culminate with either of two products: (1) a major applied research project in one area or (2) two applied research projects in two different areas of management. The independent research project(s) can be counted as up to 2 credits toward the 16-credit requirement for the M.B.A. degree. For more information, contact the program faculty.

COURSES

MBA 301 MANAGERIAL ACCOUNTING AND FINANCE

This course provides an understanding of accounting measurements and an appreciation of the ways in which managers use accounting data. It deals with concepts and tools of analysis necessary for the selection, quantification, and communication of business events through the accounting process.

Staff

Offered every semester

MBA 302 QUANTITATIVE METHODS

An introduction to basic mathematical and statistical techniques used by management. Topics included are: probability, statistical estimation

and inference, error analysis, elementary decision theory, regression analysis, and optimization.

Staff Offered every semester

MBA 303 MANAGERIAL ECONOMICS

Designed to provide an overview of micro- and macroeconomics, this course helps students gain a general understanding of economics as it affects and can be influenced by the manager. Examples of subject areas covered include monetary and fiscal policies, national income and product accounts demand and cost analysis, pricing, theory of production, business cycles, and forecasting.

Staff Offered every semester

THE CORE CURRICULUM

MBA 310 ORGANIZATION BEHAVIOR

Designed to give students an opportunity to experience and investigate the relevancy to management of a series of topics based in psychology, social psychology, and sociology. The course explores the interaction between individuals and the systems in which they live and work, offering insight into the impact—on people and organizations—of individual differences, interpersonal interactions, group situations, and organization structures.

Staff Offered every semester

MBA 330 MARKETING MANAGEMENT

Surveys the role of marketing in its environment. Topics include: market targets and positioning; consumer behavior; product policy, pricing, distribution; promotion; international and industrial marketing; marketing of services. Text, readings, cases, and a term project supply experience in strategic market planning and management. Prerequisites: MBA 302 and 303.

Staff _____ Offered every semester

MBA 340 FINANCIAL MANAGEMENT

An introductory study of financial decision making from the perspective of the internal financial manager. The major topics are the financing, investment, and dividend decisions of the firm. Prerequisites: MBA 301, 302, and 303.

Staff Offered every semester

MBA 350 OPERATIONS MANAGEMENT

This course is designed to study the techniques and models used in management decision making. Problems are analyzed to explore in depth various aspects of these techniques and to emphasize their applications. Topics include: production design and process planning, layout of physical facilities, production standards and work methods, job evaluation, forecasting, inventory control, quality control, analytical methods in operations management, material requirements planning, research, and product development. Prerequisites: MBA 301, 302, and 303.

Staff	Offered every semester
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MBA 362 CORPORATE SOCIAL RESPONSIBILITY

Managers must understand their environment to make effective decisions. This course focuses on the interaction between the manager and

societal forces. Political, social, economic, and legal issues are considered, and the role of values and ethics in evaluating these environmental forces is analyzed. The primary method of instruction is case study. A paper and group presentations are required. The course integrates analytical skills developed in the basic and core courses. Prerequisites: MBA 310 and 330.

Staff

Offered every year

CAPSTONE COURSES

MBA 360 BUSINESS POLICY

Business Policy focuses on those general management skills involved in choosing the strategy for goals and purposes of organizations and in committing critical resources to the organization's goals. The course integrates the major management functions, viewing the organization as an organic entity comprising a system in itself but impacting on and impacted by its environment. The method of instruction is case study. Prerequisites: MBA 310, 330, 340, and 350.

Staff

Offered every year

MBA 361 SMALL BUSINESS MANAGEMENT

A survey of the particular problems involved in initiating and operating a small business, with special emphasis on the problems of market structure, finance, and productivity. Entrepreneurial organization and style are discussed relative to a growing and increasingly complex society. Case study and field research projects are the primary methods of instruction. Prerequisites: MBA 310, 330, 340, and 350.

Staff

Offered every year

ELECTIVES

MBA 311 ORGANIZATION STRUCTURE AND PROCESS

This course is designed to study issues relating to the interaction between organization structure and processes and individuals within organizations. The primary focus is on formal and informal organization. Constraints and opportunities presented by organizations are explored in depth. A combination of lectures, readings, and cases is used. The course is designed primarily around class discussions of cases used to develop analytical skills needed to solve organizational problems. Students are expected to prepare case analyses both individually and in groups. Prerequisite: MBA 310.

Staff

Offered every year

MBA 316 CAREER DEVELOPMENT

Students survey major theories of career and adult development and apply those theories in a self-study. Prerequisite: MBA 310.

Staff

Offered every year

MBA 318 GROUP DYNAMICS

A review of basic group behavior theory and concepts is followed by more detailed examination of groups as open systems. The class serves as a laboratory for observation and analysis and includes an intensive small group experience. Prerequisite: MBA 310.

Staff

Offered every year

MBA 319 SEMINAR IN ORGANIZATION BEHAVIOR

Advanced seminar on selected subjects.

MBA 320 ORGANIZATION DEVELOPMENT

A survey of organization development concepts and techniques emphasizing applied behavioral science approaches toward (a) more effective management practices and (b) implementing changes in organizations. In addition to participating in in-class cases, lectures, and exercises, students are expected to meet weekly in work teams. Prerequisite: MBA 310.

Staff

Offered every year

MBA 322 CONSULTING STRATEGIES AND SKILLS

This course focuses on organization development change agent skills. Viewing the change agent as either an internal or external manager or consultant, the course utilizes a practicum approach, in which students engage in and discuss "live" projects. The course involves reading, classroom exercises and discussion, and projects in the areas of organizational diagnosis and change, training design and implementation, and change agent skills. Prerequisites: MBA 318 and 320. MBA 318 may be taken concurrently.

Staff

Offered every year

MBA 325 PERSONNEL MANAGEMENT

Explores the general areas of human resource management, including job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO, OSHA requirements, manpower planning, and women in management. Prerequisite: MBA 310.

Staff

Offered every year

MBA 326 INDUSTRIAL RELATIONS

An introduction to the concepts, theory, and practice of labor-management relations. Topics covered include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations. Prerequisite: MBA 325.

Staff

Offered every year

MBA 329 SEMINAR IN HUMAN RESOURCE MANAGEMENT AND ORGANIZATION DEVELOPMENT

Advanced seminar on selected subjects.

MBA 331 MARKETING RESEARCH

Focuses on defining marketing research problems, choosing appropriate data collection and analysis tools, and interpreting research results to determine implications for marketing strategy. Topics include: questionnaire design; sampling; mail and telephone surveys; personal interviews; use of secondary data; regression decision analyses; conjoint analyses, and multidimensional scaling. Research project, written and oral reports. Prerequisite: MBA 330.

Staff

Offered every year

MBA 332 APPLIED MARKETING PROJECTS

Workshop seminar for students involved in applied marketing projects. Students critique each others' work. Prerequisite: MBA 331.

Staff

Offered every year

MBA 334 CONSUMER BEHAVIOR

Studies consumers as individuals and in groups. Topics include: complex decision-making models, habit, and low-involvement models; buying behavior of organizations. Applications, cases, term project, written and oral reports. Prerequisite: MBA 330.

Staff

Offered every year

MBA 335 INTERNATIONAL MARKETING

Marketing across national boundaries and within selected national markets. Problems and decisions facing marketing managers in the international environment: products, pricing, and promotion necessary to coordinate a firm's international activities. Cases, readings, research projects. Prerequisite: MBA 330.

Staff

Offered every year

MBA 336 MARKETING OF SERVICES

Covers the special nature of marketing when the consumer creates the product at the level of consumption and without the opportunity to examine the product first. Service marketing depends heavily on the reputation of the supplier, and upon location/convenience factors; the marketing mix must be adjusted to accommodate these characteristics. The differences between small and large business suppliers and those operating under regulation—such as utilities—are examined. Prerequisite: MBA 330.

Staff

Offered every year

MBA 337 INDUSTRIAL MARKETING

Special marketing problems of industrial and other organizational customers including government. Designed for managers of marketing and allied functions such as research and development, engineering, production, purchasing, and corporate planning/strategy. Prerequisite: MBA 330.

Staff

Offered every year

MBA 338 ADVERTISING AND PROMOTION

A management approach to the promotion component of the marketing mix. Topics include: print, broadcast, and other advertising; personal selling; sales promotion; publicity, public relations, and display. Field project, written and oral reports, cases. Prerequisite: MBA 330.

Staff

Offered every year

MBA 339 SEMINAR IN MARKETING

Advanced seminar on selected subjects.

MBA 341 CORPORATE FINANCE

A survey of recent developments in financial management. Theory, test of theory, and problems in practical implementation are discussed. Prerequisite: MBA 340.

Staff

Offered every year

MBA 342 INVESTMENTS

This course covers investment principles, market behavior and investment strategy. In addition to stocks and bonds, alternative investments, such as tax shelters and options are discussed in light of risk-return analysis. Guest speakers from various sectors of the investment community present their views and discuss these with the class. Prerequisite: MBA 340.

Staff Offered every year

MBA 343 ADVANCED MANAGERIAL ACCOUNTING

Explains how accounting data, when utilized properly, can help solve problems that confront those directly responsible for the management of an enterprise. Topics on standard cost and budgeting involve behavioral characteristics that should be considered by the manager who determines the level of standards, the evaluation of variances, the preparation of budgets, and the use of budgets in control. Prerequisite: MBA 301.

Staff Offered every year

MBA 344 FEDERAL TAX ACCOUNTING

A basic course in the principles of Federal income tax laws as they pertain to individuals, partnerships, and corporations. The course explores the general rules and accounting principles required, emphasizing preparation of tax returns through specific problem analysis. Prerequisite: MBA 301.

Staff Offered every year

MBA 345 INTERNATIONAL FINANCE

This course focuses on specific problems encountered by financial managers in corporations with international financial functions. Topics included are: foreign exchange risk, political risk, long-run investment and financing, working capital management, and financial control. Prerequisite: MBA 340.

Staff Offered every year

MBA 349 SEMINAR IN FINANCE

Advanced seminar on selected subjects.

MBA 351 OPERATIONS RESEARCH

A study of operations research techniques useful in business and management decision making, including: classical optimization, linear and integer programming, network models, dynamic programming, queuing theory, Markov processes, and simulation methods. Prerequisite: MBA 350.

Staff Offered every year

MBA353 PRODUCTION MANAGEMENT

This course focuses upon the many complex decisions a production manager faces. Topics include: the design of forecasting, production planning, inventory control, and quality control systems, and how each of these systems is integrated into the firm as a whole. Cases and readings are used extensively. Prerequisite: MBA 350.

Staff Offered every year

MBA 354 RESEARCH AND DEVELOPMENT MANAGEMENT

This course presents an overview of the characteristics unique to managing a research and development (R & D) unit as well as a general

understanding of how the R & D unit relates to the ongoing functioning of the entire organization (marketing, manufacturing, personnel, finance, corporate strategy, etc.). The course provides experiences in applying previously learned behavioral, economic, and managerial concepts and techniques to the design and management of R & D. Some of the topic areas covered in the course are: the economics of R & D, project selection and scheduling, productivity in the R & D setting, organization and management of R & D, information flows and communication patterns, interaction with other parts of the firm, and planning for R & D. Prerequisites: MBA 310 and 350.

Staff

Offered every year

MBA 359 SEMINAR IN OPERATIONS MANAGEMENT

Advanced seminar on selected subjects.

MBA 372 WOMEN IN THE WORKPLACE

Topics include: attitude formation and change, prejudice and discrimination, stereotyping, assertiveness, career advancement, role stress, and power. The instructional format includes lectures, class discussions, cases, and exercises.

Staff

Offered every year

MBA 378 LEGAL ASPECTS OF MANAGEMENT

Examines the legal framework within which American business operates. The course is concerned with various laws that determine both the rights and obligations of persons taking part in business transactions. Emphasis is on those areas of the law commonly encountered by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. Assigned readings and class discussion of selected cases illustrate these topics.

Staff

Offered every year

MBA 398 DIRECTED RESEARCH IN MANAGEMENT

Offered for variable credit.

MBA 399 DIRECTED READINGS IN MANAGEMENT

Offered for variable credit. Restricted to topics not covered by the curriculum. Permission of department chair required.

THE GRADUATE MASTER OF HEALTH ADMINISTRATION PROGRAM

The M.H.A. is a joint program offered in conjunction with the Department of Family and Community Medicine of the University of Massachusetts Medical School. The M.H.A. program combines the study of management and health, thereby reflecting the administrative and technological complexity of modern health systems.

Students may concentrate in either of two specific areas:

1) *health institution administration*—preparing students for careers or career advancement in such fields as hospital administration and health care administration.

2) *health systems planning and administration*—preparing students for

careers or career advancement in such health agencies as health maintenance organizations, mental health agencies, industrial health programs, health planning agencies, and home health agencies.

The Clark/UMass program is oriented toward students with significant prior work experience in any health field, and nearly all of the students participating in the program are currently employed in health professions. The program will consider exceptionally qualified applicants with little or no experience in the health profession and will arrange a required field experience for those students.

Within the program's framework, students can design individual courses of study to meet their own needs, and individual counseling is available to students as they plan curriculum, internship, and field projects. In addition to background courses, core courses, and electives, a required field project develops problem-solving skills in a professional context.

The M.H.A. program requires 16 graduate credits for the degree, equivalent to four semesters of full-time graduate study. The 16 credits are organized into five categories of course work and independent study (courses meet for 14 weeks, three hours a week, unless otherwise indicated):

1) *Three Required Background Courses*—These courses are designed to introduce students to the fundamental language, concepts, and skills underlying the traditional or core functional management areas and provide a framework for health systems analysis.

Management 301, Managerial Accounting

Management 302, Quantitative Methods

M.H.A. 320, Health Systems

Students with previous coursework or experience in these areas may elect to waive these courses by passing a written or oral examination.

2) *Seven Required Core Courses*—These courses are intended to provide students with basic background knowledge and skills in several important areas in management and health systems.

MHA 310, Organization Behavior

MHA 330, Epidemiology

MHA 340, Health Planning

MHA 350, Economic Aspects of the Medical Care Industry

MHA 360, Legal Aspects of Health Care Administration

MHA 370, Financial Management of Health Institutions

MHA 380, Health Systems and Institutions Policy Analysis

3) *Two Courses Required in Student's Area of Concentration*—Two areas of concentration are available:

Health Institution Administration

Management 350, Operations Management

Management 336, Marketing Service Organizations

Health Systems Planning and Administration

MHA 376, Sociology of Health Care

MHA 378, The Human Ecology of Illness and Health Care

4) *Three Electives*—These courses are designed to focus students more intensively on advanced topics in a particular functional area, or they provide students an opportunity to integrate previous coursework by

applying their knowledge/skills to a particular problem area, or they provide students an opportunity to explore important related topics in management and health systems.

MHA 341, Hospital Planning

MHA 381, Case Studies in Health Administration

MHA 382, Case Studies in Hospital Administration

MHA 383, Health Promotion and Disease Prevention

MHA 384, Ethical Issues in Health Care Delivery

MHA 385, Ambulatory Care Planning and Administration

MHA 370, Information Processing Systems and Computer Programming

MHA 374, Information Management

MHA 396, Special Projects

MHA 398, Directed Research

MHA 399, Directed Readings

5) *Applied Field Project*—independent study to demonstrate the student's ability to apply health administration concepts.

COURSES

BACKGROUND COURSES

MBA 301 MANAGERIAL ACCOUNTING

See course description under MBA listings.

MBA 302 QUANTITATIVE METHODS

See course description under MBA listings.

MHA 320 HEALTH SYSTEMS

Examines various input-throughput-output models of health systems, and discusses information necessary to understand the variety of components and linkages. The systems approach is used to identify key issues in various health service sectors, particularly primary care, hospital service, and high technology services. Discussions and student papers focus on key policy issues related to health systems in the United States and other countries.

Staff

Offered every year

REQUIRED CORE COURSES

MHA 310 ORGANIZATION BEHAVIOR IN HEALTH ADMINISTRATION

Focuses on understanding human behavior in the organization context with implications for effective management. Specific managerial techniques intended to improve the utilization and coordination of human resources in organizations are explored through case studies and exercises.

Staff

Offered every year

MHA 330 PRINCIPLES OF EPIDEMIOLOGY

Covers the basic principles and skills used by the epidemiologist to uncover and explain disease patterns in humans. Included are: description of disease by person, place, and time; principles of study design; analysis and interpretation of epidemiologic data. Emphasis is on prac-

tical application through examples from literature as well as student projects.

Staff

Offered every year

MHA 340 HEALTH PLANNING

Examines health planning concepts and methods with considerable attention to their practice at the local, regional, state, and national level. Topics discussed include the history of health planning in the United States, health systems analysis, goal and priority setting, cost/effectiveness studies, politics of health planning, plan implementation, and program evaluation. Analyses of actual health plans are included.

Staff

Offered every year

MHA 350 ECONOMIC ASPECTS OF THE MEDICAL CARE INDUSTRY

Examines the economic aspects of the health services system in the United States in terms of production, distribution, and institutional structure. Topics discussed include determining demand for medical care, financing and delivery mechanisms and their effects, and the medical manpower market. The role of government planning and regulation of the medical care industry also is studied. Particular emphasis is given to economic analysis of the major alternative programs being proposed to restructure the American medical care system. No previous training in economics is necessary; economic concepts are explained as the course progresses.

Staff

Offered every year

MHA 360 LEGAL ASPECTS OF HEALTH CARE ADMINISTRATION

Focuses on the study of the legal foundations, principles, and processes that influence the provision of individual and community health services. Consideration is given to the origins of health law, individual and corporate liability, the physician/patient relationship, legal aspects of hospital administration, health legislative activities, and controversial medical/legal issues.

Staff

Offered every year

MHA 370 FINANCIAL MANAGEMENT OF HEALTH INSTITUTIONS

A comprehensive study of financial decision making in hospitals and other health care institutions. Topics covered include both the varied sources of financing and the efficient allocation of resources. The main format is the use of accounting data to implement economic models.

(Prerequisites: MBA 301, 302, and MHA 350.)

Staff

Offered every year

MHA 380 HEALTH SYSTEMS AND INSTITUTIONS POLICY ANALYSIS

A synthesis of the background and core coursework using case studies that focus on multidisciplinary solutions to actual problems. About half of the case studies involve health system problems, and half refer to health institution problems. (Prerequisites: MBA 301, 302, MHA 310, 320, 330, 340, 350, 360, 370.)

Staff

Offered every year

CORE COURSES (INSTITUTIONAL ADMINISTRATION CONCENTRATION)

MBA 336 MARKETING SERVICE ORGANIZATIONS

See course description under MBA listings.

MBA 350 OPERATIONS MANAGEMENT

See course description under MBA listings.

CORE COURSES (HEALTH SYSTEMS PLANNING AND ADMINISTRATION CONCENTRATION)

MHA 376 SOCIOLOGY OF HEALTH CARE

Basic concepts in sociological analysis are applied to hospitals and other care facilities as social structures, to the social definition of illness, and to health behavior. Discussion of social movements and their implications for the future of health care delivery. Included in these discussions are the rise of technology vis-a-vis the therapeutic relationships and the growing tendency of individuals to take more responsibility for their own well being (yoga, etc.) Students develop models for broadly-conceived solutions to major problems in the American health care system.

Staff

Offered every year

MHA 378 THE HUMAN ECOLOGY OF ILLNESS AND HEALTH CARE

Emphasizes the interplay of psychological and environmental influences on health, illness associated behaviors, and the provision of health care services. Traditional, medical perspectives are critiqued, and the possibilities of an ecological framework for examining health and health care issues discussed.

Staff

Offered every year

ELECTIVES

MHA 341 HOSPITAL PLANNING

Examines input-output models of hospital systems and applies these models to problem identification, goal and objective setting, strategy development, and project evaluation. Also focuses on environmental factors influencing change in hospital systems. Actual hospital plans are analyzed.

Staff

Offered every year

MHA 381 CASE STUDIES IN HEALTH ADMINISTRATION

Focus is on hospital and multihospital systems. Cases relate to such topics as long-range facility planning, sharing hospital services, hospital responses to community needs, small hospital issues, hospital mergers, and multi-hospital systems. Students prepare written analyses of case studies for classroom discussion.

Staff

Offered every year

MHA 382 CASE STUDIES IN HOSPITAL ADMINISTRATION

Focus is on internal hospital problems and managerial responses; cases relate to personnel, equipment, inventory, financing, and policy issues in a variety of hospital types ranging from university teaching hospitals to small rural hospitals.

Staff

Offered every year

MHA 383 HEALTH PROMOTION AND DISEASE PREVENTION

Utilizes a natural history-of-disease framework to identify and evaluate prevention/promotion strategies. Among the primary prevention approaches examined are those addressing specific types of cancer, heart

disease, substance abuse, mental illness, and infectious diseases. A broad range of screening services (secondary prevention) are also studied. Strategies are evaluated in terms of their effectiveness, costs, target population, resources, and service protocols. Student papers and presentations on specific health promotion and disease prevention programs are required.

Staff

Offered every year

MHA 384 ETHICAL ISSUES IN HEALTH CARE DELIVERY

A philosophical investigation of typical issues in medical ethics. These may include: psychosurgery, behavior modification and control, moral issues in research and human subjects, genetic testing and counseling, abortion, cloning and in-vitro fertilization, confidentiality and truth-telling, patients' rights, and allocation of scarce medical resources.

Staff

Offered every year

MHA 385 AMBULATORY CARE PLANNING AND ADMINISTRATION

Applies planning and administration concepts and methods to the variety of ambulatory care institutions, including freestanding health centers, HMOs, and hospital outpatient departments.

Staff

Offered every year

MPA 370 INFORMATION PROCESSING SYSTEMS AND COMPUTER PROGRAMMING

Utilizes the resources of the computer center to facilitate the acquisition of basic programming skills. Included in this course are the special application of programming skills and statistical packages in the administration of government and health care agencies.

Staff

Offered every year

MPA 374 INFORMATION MANAGEMENT

Uses basic programming skills as applied to the management of information in government and health care agencies. Students become familiar with computer applications for recordkeeping, interagency data sharing, and use of a data file for program evaluation.

Staff

Offered every year

MHA 396 SPECIAL PROJECTS

MHA 398 DIRECTED RESEARCH

MHA 399 DIRECTED READINGS

MHA 400 RESEARCH PROJECT WRITING

Mathematics and Computer Science

DEPARTMENT FACULTY

Edward Cline, Ph.D., Associate Professor of Mathematics, Chair

John F. Kennison, Ph.D., Professor of Mathematics

Robert W. Kilmoeyer Jr., Ph.D., Associate Professor of Mathematics

Alan E. Larson, Director of Computer Services

David E. Joyce, Ph.D., Assistant Professor of Mathematics

Lawrence E. Morris, Ph.D., Assistant Professor of Mathematics

Andrew Chase-Klapper, Ph.D., Visiting Assistant Professor of Mathematics

Edward McDowell, Ph.D., Visiting Assistant Professor of Mathematics

Evelyn B. Vaskas, Ph.D., Assistant Professor of Mathematics, part time

UNDERGRADUATE PROGRAM

The Mathematics Department serves four distinct areas in the University. The mathematical services facility is available for students interested primarily in elementary mathematics. The department offers several courses of a general nature to meet the needs of students in all levels who are interested in mathematics as a discipline in itself or as a foundation for further study in other disciplines. The undergraduate mathematics major provides a number of different tracks which introduce a student seriously interested in mathematics to this subject and to its applications. Finally, the department offers a major in computer science.

MATHEMATICAL SERVICES: A variety of elementary mathematical needs are met by the Math Clinic and Tutorial (Mathematics) 10. Students work at their own pace and choose a program suited to their own needs. The course is not offered for credit.

Math 11 is primarily a precalculus course. Students may also use this course as a way to strengthen their background in high school mathematics.

GENERAL COURSES: Knowledge of calculus (beginning with Math 120) is essential for any serious student of the physical sciences or mathematics. It is used heavily in economics and has been applied extensively in other disciplines.

Math 120 is normally open to freshmen; however, students with a weak background are advised to take Math 10 or Math 11 first. A placement test will be given during orientation week and other diagnostic tests are available for students who are uncertain about which course to take. The placement test is available at the Mathematics Office and is required of all students who wish to take a mathematics course at or beyond the level of Math 120. It is possible to omit Math 120 and 121, and begin with Math 130 (Intermediate Calculus) if sufficient achievement is shown on the advanced placement test given in high school. If this is done, the student automatically receives credit for Math 120 and 121.

Students who need a basic course in computer programming might take Math 117, which could be followed by Math 118 or 119. Linear algebra has many applications in the sciences and the social sciences. Math 113 is an introduction to this subject; Math 115 is a follow up containing advanced topics. Students who wish to experience some of the beauty of mathematical reasoning at an elementary level might take Math 102, 104, 107, or 113.

The department offers several basic advanced courses in abstract mathematics: Math 214, Math 215, Math 218, and Math 245. The first three, particularly, are designed for students majoring in pure mathematics and others who have strong backgrounds, a taste for logically rigorous mathematics, and a willingness to work independently. Students interested in the pure mathematics track of the mathematics major

and others interested in these courses should contact the department for information in this part of the program.

THE MAJOR IN MATHEMATICS

The prospective major is urged to visit the department and to discuss fully the different approaches to the major made available by the department. There are programs in pure mathematics, actuarial science, mathematics/computer science, mathematics/education, and mathematics/management. The objectives and requirements for these programs are outlined below. Although the following descriptions of each option are brief, we hope they indicate the nature of the program involved. We encourage students to call on the department for additional information.

PURE MATHEMATICS: The pure mathematics major at Clark is designed for two groups of students. The first includes the liberal arts student interested in the broad spectrum of mathematical thought who does not wish to limit himself/herself to the more well-defined vocational objectives of the other majors. Such a student will find sufficient flexibility in the program to meet his/her needs. The second group consists of those students planning graduate work in mathematics. The mathematics requirements for this major are 10 semester courses including Math 120, 121 (or the equivalent), 130, 131, 113, and two semesters of a 200-level mathematics course (usually 214 or 215). It is further expected that each major will have a culminating mathematical experience serving to give direction to his/her studies. This requirement will normally be satisfied by an advanced course, either a reading course or an advanced undergraduate course (making a total of three semesters of 200-level courses) or a graduate course. Alternatively, the requirement may be met by an honors project, work study, interdepartmental readings, or other such experiences upon departmental approval, which should be obtained before the senior year. For the student planning to enter graduate school, the department strongly recommends both the 214 and 215 sequences. In addition, 216 or the 218 sequence are recommended.

The pure mathematics major has a science minor requirement. The objective is that the student be involved in a science to a sufficient depth to ensure that some of the uses of mathematics are illustrated. Each student will take four semester courses in one of the science departments, at least one of which uses mathematics heavily. Introductory courses, which are designed for nonmajors, will not be counted toward the minor. Ordinarily, minors from chemistry, physics, and science, technology and society are acceptable without approval. Certain minors from economics, geography, music, philosophy (related to the study of mathematical truth), psychology, and sociology are acceptable with departmental approval.

APPLIED MATHEMATICS: The applied mathematics major is designed for students interested in the application of mathematics to science or social sciences. The major emphasizes analysis for the physical sciences and probability and statistics for the life and social sciences. In addition to those students interested in the applied mathematics major (either alone or as a component of a dual major), it is hoped that the list of courses below will be useful to science students designing a minor in mathematics.

The major will require 10 semester hours of mathematics including

Math 120, 121, 130, 131, 113, 117 (or the equivalent), 140, and either 216 or 217. The remaining required courses should be from among the following: 100, 118, 119, 143, any 200-level course, and certain additional consortium courses upon departmental approval. It is strongly recommended that students interested in physical sciences take 216 while those interested in life and social sciences take 217. The student interested in graduate school should consider the other 200-level courses, especially 214.

The minor requirement consists of a substantial sequence of courses in a mathematically oriented science. The requirement is five semester courses which must not include introductory courses for nonmajors. Minors from chemistry, physics, and science, technology and society are acceptable without approval. Certain minors from biology, economics, geography, psychology, and sociology are acceptable with departmental approval. The criterion will be that a large proportion of the courses involve the application of mathematical techniques.

ACTUARIAL SCIENCE: Actuarial science could be described as the science of finance and insurance. A program of study in this field requires a firm grounding in mathematics, but involves problems that cut across the interface of statistics, economics, demography, law, and business management as well.

The requirements for this major consist of courses in mathematics, management, and computer science relevant to actuarial science, specifically: Math 120, 121, 130, 131, 117, 118, 143, 217, English 18 or an approved substitute, plus four units to be chosen from the following: Math 100, 119, 247, Computer Science 102, 103, Management 201, 240, 250, Economics 10, or certain other courses with departmental approval.

It is also possible to replace, with departmental approval, the management courses with the following COPACE courses: Management 201 by BA 117(a) and (b), Management 240 by BA 118, Management 250 by BA 176.

Additional courses in computer science, economics, and management are recommended as a supplement to this major. Math 150 (Problems Seminar) also is available for those students who wish to prepare for specific actuarial examinations. Please consult with the department for further details regarding actuarial science.

MATHEMATICS/MANAGEMENT: The objective of this program is to make available to the mathematically inclined student the opportunity to prepare for (1) a career in business management, (2) graduate study in operations research, or (3) graduate work in a master of business administration program. Course requirements: Math 120, 121, 130, 131, 217. At least two units from the following: Math 100, 118, 119, 143, 247; computer science: Math 117, or CS 101, and at least one additional unit from the following: CS 102, 103, 140; management science: Mgmt 100, plus at least one unit from the following: Mgmt 201, 240, 210, 230, 250. It is also possible to replace (with departmental approval) the required management courses with the following COPACE courses: Mgmt 201 by BA 117(a) and (b); Mgmt 240 by BA 118, Mgmt 210 by BA 195, Mgmt 230 by BA 124, and Mgmt 250 by BA 176; economics: at least two units, not to include courses which are principally mathematical.

It is also recommended that, as a supplement to this major, students take Math 143 and 247. In computer science, CS 103 is also strongly recommended. A student anticipating further study in an M.B.A. program should attempt to take all the management courses listed above and possibly one or more graduate courses in management. Finally,

students are encouraged to acquire a reading knowledge of at least one foreign language.

MATHEMATICS/EDUCATION: The Mathematics/Education Program is designed for the student preparing to teach in the secondary school. This program consists of (1) major in mathematics, containing courses relevant to students' future needs in teaching, (2) a minor in education, and (3) additional courses which will help to integrate students' involvement in mathematical education with other areas of knowledge.

The specific course requirements for this major are as follows:

- 1) The major in mathematics consists of eight units. Math 120, 121 (or the equivalent), 113, 217, 102 are required and the remaining courses may be chosen from Math 115, 104, 107 and any 200-level course. All majors are required to take at least one unit of a 200-level mathematics course.
- 2) The minor in education consists of Psychology 130, Education 290, 217, 272, and 150.
- 3) Additional course requirements: (a) an introductory laboratory course in the life or physical sciences, (b) four semester courses in any of the following areas: economics; English; foreign language; geography; geology; government; history; linguistics; management; philosophy; psychology; sociology; science, technology and society; visual and performing arts.

The minor for this program is designed to meet the present certification requirements in Massachusetts.

MATHEMATICS/COMPUTER SCIENCE: This program enables the student to major in mathematics with emphasis on computer science and its applications, for example, in operations research. It provides a firm foundation for further work or graduate study in computer science. This major should be seriously considered as a possible dual major with any field which draws upon computer science as a method of analysis. Course requirements: Math 120, 121, 130, 131, 217, 117 or Computer Science 101, Math 118, 119, Computer Science 102, 103, 140, Math 100 or 247. In addition, an advanced course in computer science (at Clark of W.P.I.) or an advanced project must be undertaken. Consult department for approval.

THE UNDERGRADUATE MAJOR IN COMPUTER SCIENCE

The Computer Science major at Clark is designed for the education of computer scientists who will also have a solid background in mathematics. The department requires the student to develop skills in the areas of software and systems design. The basic goal of the major is to produce a sophisticated user of the computer who is able to apply his/her expertise in other areas. Therefore, to encourage breadth in the program, we require the student to do significant work in a minor area in which there are extensive computer applications.

COMPUTER SCIENCE REQUIREMENTS: The required courses in computer science develop the student's skills in software and systems design. As the student progresses through the program he/she learns to work with successively higher levels of organization of information. The first three courses (CS 101, CS 102, CS 140) introduce the student to computer programming and are intended to enable the student to write a correct program, well documented, in a reasonable amount of time. The problem of understanding the movement and storage of information inside the computer is treated in CS 103, CS 203, and CS

160. In addition CS 103 and CS 203 introduce the student to COBOL, the main language for business applications. The remaining courses introduce the student to the whole systems analysis process in which one starts with a problem, more or less vaguely defined, and proceeds to a concrete solution.

The required courses are: CS 101, CS 102, CS 103, CS 140, CS 160, CS 203, CS 220, CS 250.

The following electives are highly recommended: CS 145, CS 155, CS 170.

MATHEMATICS REQUIREMENTS: The computer science major requires a total of six mathematics courses, including two electives. The required courses are: Math 120, Math 121, Math 113, and Math 147. The latter is a new one-semester course in probability and statistics designed to present a practical overview of the field. Students must choose two electives from the following: Math 100, Math 107, Math 118, Math 119, Math 217, Math 244, Math 245, Math 247.

THE MINOR REQUIREMENT: The department requires a four-course minor. The minor may be selected from any discipline represented in the University. The courses chosen for the minor must not include introductory courses for non-majors. One of the four courses chosen must involve interaction between the minor discipline and computer science in a significant way.

If the minor chosen is mathematics, the student is advised to concentrate on modelling. In particular, the department recommends that the student include Math 100, Math 118, Math 119, Math 247 and possibly Math 217 if he/she minors in mathematics.

GRADUATE PROGRAM

The department offers courses leading to the degrees of master of arts and doctor of philosophy in mathematics.

The requirements for the M.A.* are: (1) 10 full courses at least 8 of which must be on the 300 level. These courses usually include one or two full courses of Mathematics 330—the writing of the master's thesis. They may include seminars and reading courses; (2) the basic courses, Mathematics 316, 318, and 325 must be included. Each of these requirements may be waived for a student presenting evidence satisfying the department of his or her knowledge of the material in question; (3) a master's thesis, and (4) an oral examination.

A student working toward the Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. preliminary examination.

The requirements for the Ph.D.* follow the general requirements of the graduate school. The Ph.D. preliminary examination is usually given orally, but may be written under certain circumstances. Students should consult with their advisers by November of their second year. Students entering with a master's degree should discuss the examination immediately. Failure to take this examination at the appropriate time may result in the department's not recommending a student for continued support. Scholarships, graduate instructorships, and new courses are subject to final approval by the Graduate Board.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective research in his or her field. The department's decision will depend heavily upon the recommendation of the candidate's adviser.

*All candidates for the M.A. and Ph.D. degrees in Mathematics will be required to serve as teaching assistants or as assistants in the computing center as part of the work for their degrees.

MATHEMATICS COURSES

10 MATH CLINIC AND TUTORIAL

Individual conferences, diagnostic tests, programmed exercises, and projects are used to develop mathematical skills, concepts, and confidence. This course does not involve classes, but relies on a one-time approach. This course is not offered for credit.

Staff

11 INTRODUCTION TO MATHEMATICS

This course covers the algebra and trigonometry needed for calculus. It covers coordinate geometry, functions, and their graphs. Basic techniques for working with functions are included. Entering students should have a solid grasp of elementary algebra.

Mr. Kennison, Staff

Offered every semester

88 DIRECTED READINGS IN MATHEMATICS

Offered for variable credit.

Staff

Not offered on a regular basis

89 SPECIAL PROJECTS IN MATHEMATICS

Offered for variable credit.

Staff

Not offered on a regular basis

100 MATHEMATICAL MODELS

This course introduces the student to the concept of a mathematical model and its application to the solution of real problems. Examples will include application in the areas of finance, transportation, production scheduling, economics, and population theory. The course will include analysis of models constructed by students.

Mr. Joyce

Offered every other year

102 INTRODUCTION TO GEOMETRY

This course starts with revisiting Euclidean geometry, then leads, via Desargues's and other theorems, to projective geometry. Some transformations of the plane are considered. Finally, some finite geometries are studied. One of the aims of this course is to show the beauty of the deductive approach in mathematics. Prerequisite: equivalent of Mathematics 11.

Staff

Offered every other year

104 THEORY OF NUMBERS

This is an introduction to number theory and also aims to train students to understand mathematical reasoning and learn to write proofs. The topics covered include the unique factorization of integers as products of primes, the Euclidean algorithm, congruencies, Fermat's theorem, and Euler's theorem (and some applications of the latter, e.g., magic squares). Prerequisite: equivalent of Mathematics 11.

Staff

Offered every other year

107 INTRODUCTION TO MATHEMATICAL LOGIC

The propositional calculus and the first order predicate calculus, which consist of a language and a method of proving statements made in that

language, will be constructed and discussed predominantly in relation to mathematical questions such as consistency and completeness.

Mr. Kennison

Offered every other year

113 MATRICES AND LINEAR ALGEBRA

The course is a study of the fundamental results and computational techniques of matrix algebra and vector spaces. Topics covered may include systems of linear equations, Gaussian elimination, matrix algebra, determinants, vector spaces, and linear transformations and applications. Also, the numerical analysis relevant to the fundamental computer algorithms related to this subject is discussed.

Mr. Cline

Offered every year

114 DISCRETE MATHEMATICS

This course covers aspects of mathematics which often arise in computer science. Most topics will be motivated by applications drawn from non-mathematical areas. Topics include modular arithmetic; Boolean algebra, switching circuits; languages and finite state machines; graphs, trees, flows in networks; codes, scrambled codes, Hamming metrics; finite fields; Latin squares; polynomial codes; elementary probability theory. Prerequisite: CS 101. Corequisite: CS 102 or Calculus.

Mr. Morris

Offered every other year

115 INTERMEDIATE LINEAR ALGEBRA

This course continues the study of linear algebra initiated in Math 113. Topics may include eigenvectors, eigenvalues, canonical forms, bilinear forms and applications. Again the numerical analysis relevant to computer applications is discussed in this course. Prerequisite: Math 113.

Mr. Cline

Offered every year

117 FORTRAN FOR SCIENCE STUDENTS

This is a one-semester introductory FORTRAN programming course, designed especially for students intending to pursue a major in the mathematically-oriented sciences or for those who possess a fair amount of mathematical sophistication. Although there are no prerequisites, students should have taken about three years of math in high school and should be able to handle elementary algebraic expressions and problems. This course will introduce the basic elements of FORTRAN language and an overview of computer programming and data processing in general. The course is essentially an accelerated version of Computer Science 101. Offered for half credit the first half of Semester 1.

Mr. Cline

Offered every year

118 ELEMENTARY NUMERICAL ANALYSIS

This is a one-semester introductory course in numerical analysis and the application of computers to the solution of certain numerical problems. Topics covered will include interpolation, error analysis, and interactive methods. Prerequisite: Mathematics 121 and either Mathematics 117, Computer Science 101, permission of instructor. Offered for half credit the second half of Semester 1.

Mr. Morris

Offered every year

119 LINEAR PROGRAMMING

This course will cover linear programming, its applications, and numerical algorithms. The simplex method, the theory of duality, and

several of the methods used in more specialized problems such as the transportation problem, network flow problems, or the assignment problem may be included. The linear algebra necessary will be covered in the course.

Mr. Kennison

Offered every other year

120 CALCULUS, PART I

Introduction to differential and integral calculus of one variable. This course is essential for further study in mathematics as well as for the study of applications in the natural sciences. May be taken in either semester. Prerequisite: Math 011 or placement test.

Mr. Cline, Mr. Kilmoyer, Ms. Vaskas, Staff Offered every semester

121 CALCULUS, PART II

Introduction to differential and integral calculus of one variable; sequences and series. This course continues Math 120. May be taken in either semester. Prerequisite: Mathematics 120.

Mr. Joyce, Staff

Offered every semester

130 INTERMEDIATE CALCULUS, PART I

This course assumes the knowledge of one variable calculus and deals with functions of several variables. Topics covered include partial derivatives, line and surface integration, and sequences and series. Applications of these topics to complex analysis, vector analysis, and Fourier analysis are considered. Prerequisite: Mathematics 121.

Staff

Offered every year

131 INTERMEDIATE CALCULUS, PART II

This course is a continuation of Mathematics 130. Prerequisite: Mathematics 130.

Staff

Offerd every year

140 ELEMENTARY DIFFERENTIAL EQUATIONS

This is an introduction to elementary techniques and concepts for solving and applying differential equations. The equations discussed appear in biology, economics, the physical sciences, and other fields. They give mathematical models describing exponential growth, exponential growth with bound, vibrating springs, planetary motion, and other similar situations. Prerequisite: Mathematics 131 or permission of the instructor.

Mr. Joyce

Offered every other year

143 ACTUARIAL SCIENCE

This course deals with the mathematics of finance and its applications. Compound interest, life contingencies, and population theory will be among the topics covered. The course is designed to introduce the student to the material included in the third and fourth (F.S.A.) actuarial exams. Prerequisite: Mathematics 121 or permission of the instructor.

Staff

Offered every other year

147 INTRODUCTION TO METHODS OF STATISTICAL ANALYSIS

This course provides an introduction to the methods of statistical inference. Included among the topics to be covered are an introduction to the probability distributions of frequent use in applications, numerical and graphical methods in inference, sampling from large and small

populations, estimation, hypothesis testing, regression, analysis of variants, contingency tables, and experimental design. The emphasis is on practical use, applications, and standard methods. A statistical software package is employed with the computer to carry out calculations. Prior programming experience is not a prerequisite.

Mr. Kilmoyer

Offered every year

150 PROBLEMS SEMINAR

This course emphasizes the creative use (as opposed to the mere acquisition) of mathematical tools. Students should develop their mathematical resourcefulness by pursuing one or more of the "problem areas" presented. The problems will be fairly specific yet open-ended and of interest to students at varying levels and with differing mathematical tastes. The course should be good preparation for actuarial examinations, for Mathematics 200, and for students who eventually wish to construct and analyze mathematical models in, for example, the social sciences.

Mr. Kennison

Not offered on a regular basis

200 ADVANCED PROJECTS

This course is intended for students pursuing advanced projects that involve mathematics. These projects might arise from mathematics or from some other discipline. Signature required. Offered for variable credit.

Staff

Not offered on a regular basis

214 MODERN ANALYSIS

Topological and metric methods are introduced and studied. These generalize and explain many ideas first encountered in calculus. These methods will be applied to study differentiation, integration, and convergence, among other topics, in greater depth. Prerequisite: Mathematics 131 or 113 or permission of instructor.

Staff

Offered every other year

215 MODERN ALGEBRA

This course introduces the theory of groups, rings, fields, integral domains, canonical forms, and related topics. The treatment will be axiomatic with emphasis on the construction of the proofs of certain theorems. Prerequisite: 113 or permission of instructor.

Staff

Offered every other year

216 INTRODUCTION TO FUNCTIONS OF A COMPLEX VARIABLE

This is an introductory course designed for the undergraduate science major or graduate student preparing for Mathematics 316. Cauchy's theorem, Power series, Laurent series, the residue theorem, harmonic functions, and physical applications, such as problems in two dimensional flow, are among the topics to be covered. The object is to convey understanding of the classical theorems of complex analysis as opposed to rigorous proofs of their most general statements.

Staff

Offered every other year

217 PROBABILITY AND STATISTICS

This course is designed to introduce students to the theory and applications of probability and statistics. Techniques used to solve problems will be stressed along with the associated mathematical theory. Among

the topics covered are combinatorial methods, postulates of probability, stochastic processes, probability densities, mathematical expectation, sampling distributions, estimation, hypothesis testing, regression, and correlation. The syllabus for this course includes most of the material recommended for those preparing for the second (F.S.A.) actuarial examination.

Mr. Kennison Offered every year

218 INTRODUCTION TO TOPOLOGY

Point set topology, metrization theorems, and extension theorems will be covered during the first half. During the second half, algebraic topology, a branch of mathematics that studies properties of solids and surfaces under continuous deformation (i.e., the geometry of rubber sheets), will be introduced. Topics in homotopy and homology theory will be covered.

Staff Not offered on a regular basis

244 DIFFERENTIAL EQUATIONS

First order and linear differential equations are covered. Various methods of solution are stressed, i.e., series, integrating factors, variation of parameters, etc. An introduction to partial differential equations and boundary value problems is discussed, with some applications to fluid and thermal dynamics.

Mr. Morris Offered every other year

245 APPLIED MATHEMATICS

This course studies the development of orthogonal functions, Fourier Series, Legendre Polynomials, and Bessel functions and their use in solving heat conduction and vibration problems, the Laplace Transform. Corequisite: Mathematics 130 or 131.

Staff Not offered on a regular basis

247 OPERATIONS RESEARCH

Linear models, linear programming, the simplex method, sensitivity analysis, network analysis, and dynamic programming will be covered in this one-semester course. Prerequisites: Mathematics 120 and 113.

Staff Offered every other year

290 TOPICS IN ANALYSIS

Content will be changed from year to year; interested students should contact the department secretary for details. Offered for variable credit.

Staff Not offered on regular basis

292 TOPICS IN TOPOLOGY

Topics from the theory of algebraic topology and differential geometry will be given. Course content will be changed from year to year.

Staff Not offered on a regular basis

293 HONORS I

Offered for variable credit.

Staff

299 HONORS II

Offered for variable credit.

Staff

COMPUTER SCIENCE COURSES

CS 101 INTRODUCTION TO COMPUTER PROGRAMMING

This is an introductory programming course designed for students with no mathematics beyond high school algebra. The emphasis of the course will be on using the computer and either the BASIC or the PASCAL programming language as a tool for solving problems in any discipline. Students develop a working knowledge of character representation and manipulation, number representation and arithmetic, subroutines and functions, arrays and indexing, and, most of all, structured programming techniques and algorithms that make programming easier.

Staff

Offered every semester

CS 102 COMPUTER APPLICATIONS

Advanced topics in computer use are covered including searching and sorting, file design recursion, lists, stacks and queues. Several projects requiring programming skill are assigned. Prerequisite: Computer Science 101 or permission of instructor.

Staff

Offered every semester

CS 103 INTRODUCTION TO COBOL PROGRAMMING

The concepts of COBOL, today's most widely used programming language for business applications, are introduced. The student is expected to complete a number of programming assignments during the course. Prerequisite: CS 101 or permission of instructor.

Mr. Joyce

Offered every year

CS 140 ASSEMBLER LANGUAGE PROGRAMMING

This course is designed to enable the student to write substantive programs in assembler language for the P.D.P. 11/70. While a knowledge of higher-level language is not necessary some familiarity with computer operations would be helpful. Otherwise, permission of instructor required.

Staff

Offered every year

CS 145 INTRODUCTION TO COMPUTER ORGANIZATION

A study of computer organization, operating systems, and logic design, this course is intended for students with a strong interest in computers and computing systems. Topics include the structure and organization of the major components of computers, and the mechanics of information transfer and control within the system. The functional, logical level is emphasized rather than the circuit details of hardware. Prerequisite: CS 102.

Staff

Offered every other year

CS 155 OPERATING SYSTEMS AND COMPUTER ARCHITECTURE

This advanced course studies operating systems, their dependence on computer architecture, and their interaction with user programs. Student projects implement sections of operating systems. Prerequisite: CS 140 and CS 145.

Staff

Offered every other year

CS 160 DATA STRUCTURES AND ALGORITHM ANALYSIS

Data structures such as lists, trees, graphs, and hierarchical record structures are discussed along with the algorithms to implement them.

The student learns to compare structures and to analyze algorithms for their efficiency. Topics include dynamic list processing, search/sort/merge methods, memory management, and hash coding. Prerequisite: CS 102.

Mr. Joyce

Offered every year

CS 170 COMPARATIVE ANALYSIS OF PROGRAMMING LANGUAGES

A number of programming languages are studied from a user point of view. Programming exercises in each language are assigned in a wide variety of applications. These exercises illustrate the run-time characteristics of the language and its special features such as list or string processing, and amenability to structured programming techniques. Prerequisite: CS 102.

Staff

Offered every other year

CS 201 ADVANCED COMPUTER PROGRAMMING

This course is designed for students with previous programming experience. Each student is expected to select and carry to completion a project requiring substantive computer analysis in machine language, assembler, or any higher level language. Offered for variable credit.

Staff

Not offered on a regular basis

CS 203 FILE PROCESSING

The advanced aspects of the language COBOL are used to introduce data structuring techniques and to survey the basic management information systems. Emphasis is given to attributes and utilization of sequential access and random access media and to file and index organization. The hierarchical and network approaches to databases are discussed. Prerequisite: CS 103.

Staff

Offered every year

CS 220 DATABASE MANAGEMENT AND SYSTEMS DESIGN

An advanced course on the realities of database technology emphasizes the goals of database management: performance, data integrity, future compatibility, and versatility. The concept of data models is examined and specific database discussed. The student will design and implement a database management system that includes file security and query facilities. Prerequisite: CS 160.

Staff

Offered every year

CS 250 SOFTWARE DESIGN AND DEVELOPMENT

Students work in teams to organize, develop, and manage a major project in software design starting with a problem, more or less vaguely defined, and proceeding to a concrete solution. The course provides a means for applying techniques learned in earlier classes and obtaining experience in system analysis. Prerequisite: CS 160.

Staff

Offered every year

GRADUATE COURSES: MATHEMATICS

300 SET THEORY

The course studies the foundations of set theory and the relationship of various fundamental axioms, such as Zorn's Lemma and the Axiom

of Choice. Point-set topology is examined as far as the Hahn-Mazurkiewicz theorem.

Mr. Joyce

Not offered on a regular basis

316 FUNCTIONS OF A COMPLEX VARIABLE

This course deals with the theory of functions of one complex variable that possesses a derivative. It is intended that the student in this course be brought to the point where he or she can comprehend the existing unsolved problems as well as the historical development and applications of this field. Among the most advanced topics are conformal mapping, entire functions, geometric function theory, approximation theory, and Banach spaces of analytic functions. Prerequisites: Mathematics 214 or permission of instructor.

Staff

Not offered on a regular basis

318 FUNCTIONS OF A REAL VARIABLE

This is a course in the real number system, topology, measure theory, and related topics. Signature required.

Mr. Kennison

Not offered on a regular basis

321 ALGEBRAIC TOPOLOGY

This is an introduction to algebraic topology including fibrations and coverings, homotopy, and homology. The relation with category theory will be emphasized. Prerequisites: Mathematics 215 and 318 or permission of instructor.

Staff

Not offered on a regular basis

325 ADVANCED MODERN ALGEBRA

This course studies group theory, including the Sylow theorems, free groups, finitely generated abelian groups. Categories and functors, Ring Theory, including factorization in commutative rings, polynomial rings, modules over a p.i.d. duality, tensor products. Fields and Galois Theory, including field extensions, finite fields, cyclotomic fields, separability, the fundamental theorem of Galois Theory, and the general equation of degree n . linear algebra, including canonical forms of a matrix, and bilinear forms. If time permits, the Wedderburn structure theorems for Artinian rings. Prerequisite: Mathematics 215.

Mr. Kilmoyer

Not offered on a regular basis

326 SELECTED TOPICS IN COMPLEX ANALYSIS

The course includes topics selected from the theory of univalent and multivalent functions, geometric function theory, zeros of polynomials, and extremal polynomials. Prerequisite: Mathematics 316 or permission of instructor.

Staff

Not offered on a regular basis

327 FUNCTIONAL ANALYSIS

Offered as a full course.

Staff

Not offered on a regular basis

330 MASTER'S THESIS

Offered as a full course.

Staff

335 SELECTED TOPICS IN ALGEBRA

Prerequisites: Mathematics 325 or permission of instructor.

Staff

Not offered on a regular basis

341 DIFFERENTIAL EQUATIONS

The course covers ordinary differential equations, theory, and techniques of solutions; partial differential equations; Fourier Transform, distributions, and their applications.

Staff

Not offered on a regular basis

358b CATEGORY THEORY

This is an introduction to the basics of category theory.

Staff

Not offered on a regular basis

376 REPRESENTATION THEORY OF FINITE GROUPS

Prerequisite: Mathematics 325 and permission of instructor.

Staff

Not offered on a regular basis

381 SEMINAR IN COMPLEX VARIABLES

Offered as a full course.

Staff

Not offered on a regular basis

382a SEMINAR IN ABSTRACT ANALYSIS

Offered as a full course.

Staff

Not offered on a regular basis

Music

See Department of Visual and Performing Arts.

Philosophy

DEPARTMENT FACULTY

Gary E. Overvold, Ph.D., Associate Professor of Philosophy, Department Chair

Patrick G. Derr, Ph.D., Associate Professor of Philosophy

Walter E. Wright, Ph.D., Associate Professor of Philosophy, Dean of the College, Editor of *Idealistic Studies*

Christina Hoff, Ph.D., Assistant Professor of Philosophy, Director of the New England Center for Philosophy and Public Affairs

Daniel Shartin, Ph.D., Assistant Professor of Philosophy

Kristin B. Waters, Ph.D., Assistant Professor of Philosophy

Bernard Kaplan, Ph.D., Adjunct Professor of Philosophy, Professor of Psychology, Director of the Heinz Werner Institute of Development Psychology

Albert A. Anderson, Ph.D., Adjunct Associate Professor of Philosophy, Chair of the Department of Visual and Performing Arts

Peter Lipton, D.Phil., Research Assistant Professor of Philosophy

UNDERGRADUATE PROGRAM

The Philosophy Department offers a wide variety of elective courses which can enhance the student's critical skills and intellectual breadth. Some of these can be used to fulfill Introductory Year Program requirements. Others are special electives designed to complement the studies

of students in certain other major programs or with particular pre-professional interests (for example, 133, 149, 241).

Students who wish to minor in philosophy are encouraged to take an introductory course (102 or 105 is recommended), a course in the history of philosophy (121 or 123 is recommended), and at least two advanced courses (200+). The advanced courses should be selected to complement the student's academic major and career interests.

The requirements for a major in philosophy include one course in logic (101 or 160); two courses in the history of philosophy (121, 122, 123, 125, or 215); one advanced course in the area of ethics (230, 231, and 270 are typical); one advanced course in the area of metaphysics (234, 235, 263, and 272 are typical); one advanced course in the area of epistemology (240, 241, 242, and 287 are typical); and the Capstone Seminar (298). In all, a minimum of eight courses in philosophy are required for the major.

In addition to this work in philosophy, each student is required to demonstrate a special competence in another academic area. This can be done either by completing the requirements for a double major or by completing a set of six related courses (including at least four above the introductory level) in other departments.

For students who are motivated to undertake significant independent research, the department offers a Senior Thesis Program (299) and a variety of Advanced Topics courses (297). Students interested in these possibilities should consult with individual members of the philosophy faculty.

"Honors," "High Honors," or "Highest Honors" in philosophy may be conferred at graduation upon majors who, in addition to having compiled a superior record in their major studies, successfully complete a senior thesis and an oral thesis defense.

Students desiring more information about the courses, programs, and faculty of the Philosophy Department at Clark University are invited to pick up a copy of the handbook, *A Students' Guide to Philosophy at Clark*, which is available in the department office.

COURSE NUMBERS AND LEVELS

Numbers

Meaning

- | | |
|---------|--|
| 100-109 | Introductory courses for all students; no prerequisites. |
| 120-129 | Survey courses in the history of philosophy (at least two are required for the major); usually no prerequisites. |
| 130-139 | Courses in applied ethics for all students; no prerequisites. |
| 140-199 | Intermediate courses in various areas of philosophy; usually one prerequisite. |
| 200-219 | Advanced courses in the history of philosophy; usually two prerequisites. |
| 220-249 | Advanced courses in the major systematic areas of philosophy; usually two prerequisites. |
| 250-279 | Seminars on individual philosophers or philosophical issues; usually two or more prerequisites. |
| 280-289 | Special seminars which may be taken for graduate credit by students in certain other departments; usually four or more prerequisites (plus permission) for undergraduates. |
| 290-299 | Advanced topics, individual research, senior thesis, capstone seminar, and other small, intensive courses in philosophy; usually four to six prerequisites. |

THE CENTER FOR PHILOSOPHY AND PUBLIC AFFAIRS

The Clark University Department of Philosophy houses the New England chapter of the Society for Philosophy and Public Affairs. SPPA is a national organization which seeks to promote the application of philosophical methods and insights to the consideration of such public issues as medical ethics, criminal justice, civil disobedience, pornography and censorship, economic justice, and affirmative action. The Center sponsors frequent colloquia, symposia, and conferences on public policy issues. Inquiries concerning its activities may be directed to the department.

IDEALISTIC STUDIES

The faculty of the Department of Philosophy edit and publish the international philosophical journal, *Idealistic Studies*. Founded by Robert N. Beck, *Idealistic Studies* has become one of the world's leading professional journals for the discussion and analysis of themes and problems arising within the context of the idealist tradition in philosophy.

THE PHILOSOPHY CLUB

Students interested in philosophy and philosophical dialogue, whether majors in the department or not, are invited to join the Philosophy Club. This student led organization meets regularly with invited speakers and faculty to discuss topics chosen by its members. Information on the club is available from the department.

INTRODUCTORY COURSES

101 INTRODUCTION TO LOGIC

This is an introduction to logic as both a practical skill and a branch of philosophy. The student will be introduced to the principles, methods, and philosophical foundations of logical reasoning.

Mr. Overvold, Mr. Shartin

Offered every year

102 PROBLEMS OF PHILOSOPHY

This is an introduction to philosophy through typical problems drawn from its main branches. Topics often include God's existence, the nature

of morality, scepticism, freedom vs. determinism, immortality, and political theory. Readings are taken from both classic and contemporary sources.

Mr. Anderson, Mr. Derr,
Mr. Lipton, Mr. Overvold

Offered every semester

103 ANALYTIC REASONING

This course will develop the student's analytic reasoning skills. One major emphasis of the course is the analysis of actual argumentative essays on such topics as affirmative action, the problem of evil, the nature of law, scientific method, etc. These essays are drawn from a variety of sources, including newspapers, philosophical works, legal journals, and popular magazines. We analyze the material with an eye to its cogency and persuasiveness, identifying its premises and conclusions, assumptions and implications. The course will help students read, write, and think analytically and critically.

Mr. Overvold, Mr. Shartin, Ms. Waters

Offered every semester

105 PERSONAL VALUES

This course examines some philosophical approaches to fundamental human value problems. Is there a God? Why should we be moral? What is our responsibility to the world's poor? Should we permit or choose abortion, mercy killing, or suicide? Do communities have a right to ban pornography? Can civil disobedience, war, or terrorism be morally justified? What moral issues are at stake in questions of truthfulness, sexual integrity, and love? The student will be introduced to some important moral theories and will learn some of the methods used to reason philosophically about moral questions.

Ms. Hoff, Mr. Lipton,
Ms. Waters, Mr. Wright

Offered every semester

INTERMEDIATE COURSES

121 HISTORY OF ANCIENT PHILOSOPHY

The course examines the origins of Western philosophical thought in early Greece, with special emphasis on the Pre-Socratics, Plato, and Aristotle. We will consider the classical theories of man, society, and nature which were developed and which provided the background for subsequent philosophical and scientific thought.

Mr. Anderson, Mr. Shartin

Offered every year

122 HISTORY OF MEDIEVAL PHILOSOPHY

Students will study the major Jewish, Islamic, and Christian philosophers of the medieval period. Special attention is typically given to Maimonides, Averroes, Aquinas, and Ockham. Typical issues covered include the relation of faith and reason, the nature of universals, the basis of political theory.

Mr. Shartin

Offered every other year

123 HISTORY OF MODERN EUROPEAN PHILOSOPHY

The two great movements in modern Western thought—Continental rationalism and British empiricism—will be examined from their common origin in Descartes, through their later articulations by Locke, Berkeley, Spinoza, Leibniz, and Hume, to their eventual transformation by Immanuel Kant. Particular emphasis is given to the interaction of

philosophy and science and to the powerful influence exerted by the modern European thinkers upon contemporary thought.

Mr. Derr

Offered every year

125 HISTORY OF CONTEMPORARY PHILOSOPHY

A survey of the major lines of philosophical thought characteristic of recent philosophy: pragmatism, logical positivism, ordinary language philosophy, existentialism, and phenomenology. Each alternative is considered as a coherent perspective on experience, with special attention given to its style and methodology. Prerequisite: one course in philosophy (123 is recommended).

Mr. Overvold, Ms. Waters

Offered every year

130 MEDICAL ETHICS

A philosophical investigation of typical contemporary issues in medical ethics. These may include: informed consent, definitions of death, treatment termination and euthanasia, abortion, confidentiality and truth-telling, behavior modification and control, genetic testing and counseling, research on human subjects, the allocation of scarce medical resources, asexual reproduction and in vitro fertilization, psychosurgery, and national health policy.

Mr. Derr

Offered every year

132 SOCIAL AND POLITICAL ETHICS

Typical issues which this course may cover include: What are the duties of elected or appointed officials when conscience and constituency conflict? Can political violence—whether “dirty tricks” or terrorism—be morally justified? Are moral principles of fairness and honesty relevant to political campaigning, and, if so, what limits do they set in democratic electioneering? Can or should morality be legislated? Can or should anything *else* be legislated? What is the moral status of civil disobedience?

Ms. Waters

Offered every other year

133 BUSINESS ETHICS

This course investigates moral problems which arise in and about the world of business. Do corporations have moral responsibilities, or is Milton Friedman correct in claiming that their only social responsibility is to increase profits? Is capitalism morally justifiable, or is there some other morally preferable politico-economic system which ought to take its place? We will discuss ethical issues in advertising, the moral status of affirmative action programs, and the responsibilities of business toward the environment. Each student is expected to articulate the different sides of the issues and to defend his own views in discussion and in writing.

Ms. Hoff, Mr. Shartin

Offered every semester

134 AGING, DEATH AND SOCIETY

This course will consider some moral issues in gerontology. What does society owe to its older members? How ought we to resolve conflicts between the interests of the old and the young? What do adult children owe to their adult parents? What is aging: a disease, a maturation? Is it a bad thing? Are there really life stages? How has the life cycle been depicted historically and in literature? How does it feel to grow old?

The course also considers some philosophical responses to the questions, "What is death?" and "What is the meaning of death?"

Ms. Hoff

Offered every year

136 LEGAL ETHICS

This course will consider a variety of ethical problems which arise within and about the law and the legal system. These may include the problem of the relation of law and morality, issues in professional ethics, a consideration of the social responsibilities of lawyers and judges, questions about the nature of justice, and so forth. This course may be cross-listed with sociology.

Ms. Hoff, Ms. Waters

Offered every other year

139 WOMEN AND PHILOSOPHY

This course has two major emphases. First, attention is given to the prevalent images of women in the history of Western philosophical thinking, including the tradition's general misogyny and the glimmerings of feminism in Mill, Wollstonecraft, and others. Second, the course will look at issues in contemporary philosophy which particularly affect the interests and status of women, including debates about sexual differences, the meaning of liberation, and the status of feminism as a social ideal. The course may be crosslisted under Women's Studies.

Ms. Waters

Offered every other year

140 SCIENCE, SOCIETY, AND THE SEARCH FOR TRUTH

This seminar is an intensive investigation into the origins, development, and significance of a major natural scientific theory. Attention is given to both the "internal" scientific context and the "external" social and cultural context. Readings will include original scientific literature as well as contemporary historical and philosophical analyses. This course is team-taught with Mr. Roy Andersen of the Physics Department, and is crosslisted with physics. Topics vary by year, but will include Bohr's early theory of the atom (1983) and Maxwell's electromagnetic theory (1984). No prerequisite.

Mr. Derr

Offered every year

145 EXISTENTIALISM

This course will consider literary and philosophical works by the major nineteenth- and twentieth-century existentialists, with special attention given to the questions of personal responsibility and authenticity, the meaning of death, and the death (or existence) of God.

Ms. Hoff

Offered every other year

149 AESTHETICS

Why did Plato condemn artists and their work? Can art really be as neatly categorized as Aristotle claims? Is art "experience," "emotion," or something else altogether—as suggested by Dewey, Croce, and Santayana? Among the theories of art, aesthetic experience, art criticism, and the creative process which we will consider are those of Arnheim, Sartre, Langer, Fischer, Collingwood, and Nietzsche. This course may be crosslisted under Visual and Performing Arts.

Mr. Anderson, Ms. Waters

Offered every year

150 PHILOSOPHY OF RELIGION

This course considers the nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is

given to the effect of contemporary knowledge on our understanding of religion and religious experience. Prerequisite: one course in philosophy.

Mr. Shartin, Mr. Wright

Offered every year

154 RECENT CONTINENTAL PHILOSOPHY

This course will introduce the student to three contemporary European philosophical movements: hermeneutics, critical theory, and structuralism. Prerequisite: one course in philosophy.

Mr. Overvold

Offered every other year

157 HISTORY OF MIND

The historical development of views concerning the nature of mind and its place in nature from the beginnings to the rise of modern science. Also listed as Psychology 257.

Mr. Kaplan

Offered every year

160 SYMBOLIC LOGIC

This is a basic course in symbolic logic with stress on principles of deductive rigor. There will be some consideration of the philosophical implications of logic. Topics to be discussed include: sentential calculus, predicate calculus, Tarski's definition of truth, selected metatheorems, and Henkin's completeness proof for the first order predicate calculus. This course may be crosslisted in mathematics.

Mr. Shartin

Offered every year

176 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM AND SYMBOL

A close examination of the processes of symbol formation in everyday figurative and metaphorical language, in dreams, in myths, and in other productions of the imagination. Both cultural and individual manifestations of symbol formation are examined, and various frameworks for interpretation of symbols are critically discussed. Problems of validity of interpretation will also be explored. This course is part of a Humanistic Studies Program cluster.

Mr. Kaplan, Mr. Wright

Offered every other year

182 ROMANTICISM IN THOUGHT, LITERATURE AND THE ARTS: KIERKEGAARD AND NIETZSCHE

An interdisciplinary introduction to nineteenth-century romanticism through an analysis of major writings by Soren Kierkegaard and Friedrich Nietzsche, with special emphasis on their views of knowledge, existence, and man. Attention is given to their relationship to the romantic movement in German and English literature and music. This course is part of a Humanistic Studies Program cluster.

Mr. Overvold

Offered every other year

ADVANCED COURSES

215 KANT AND THE NINETEENTH CENTURY

This course examines the work of Kant and selected later philosophers with a special emphasis on their influence on contemporary thought. Among the other philosophers considered may be: Fichte, Hegel, Schopenhauer, Nietzsche, Marx, Engels, and Comte. Prerequisite: two courses in philosophy, preferably including 123.

Mr. Wright

Offered every other year

230 THEORIES OF ETHICS

Introduces the student to the principal ethical theories which have been developed in the history of Western philosophy. We will study the answers which have been given by philosophers such as Plato, Aristotle, St. Augustine, St. Thomas Aquinas, Hobbes, Hume, Kant, and Mill to the abiding questions: What is "the Good?" How can it be realized in society and in one's personal life? Are our moral judgements objective? Why should we be moral?

Ms. Hoff, Ms. Waters

Offered every year

231 SOCIAL AND POLITICAL PHILOSOPHY

Surveys a variety of philosophical accounts of social and political institutions, including social contract theory, anarchism, socialism, and communism. Some topics given special consideration are: property, civil and natural rights, freedom and obligations, and the legitimation of political authority. Readings will include both classical (Plato, Aristotle, Locke, *et alia*) and contemporary (Marx, Rawls, Nozick, *et alia*) sources. Prerequisite: two courses in philosophy.

Ms. Waters

Offered every other year

234 METAPHYSICS

Provides an advanced survey of several fundamental problems in metaphysics. These may include the problem of universals, the problem of substance, the mind/body problem, category theory, questions of identity and individuation, and the nature of space and time. Prerequisite: two courses in philosophy.

Mr. Derr, Mr. Shartin

Offered every year

235 CONCEPTS OF SELF

This course will consider the various philosophical concepts of the "self" that have been developed by classic and contemporary philosophers. Typical thinkers whose views may be covered include Aristotle, Plato, Descartes, Kant, Heidegger, Sartre, Kierkegaard, Strawson, and Stevenson. Prerequisite: two courses in philosophy.

Ms. Hoff, Mr. Wright

Offered every other year

240 EPISTEMOLOGY

Epistemology, broadly speaking, is the study of the nature and sources of knowledge. Within this general heading are a host of specific topics, and from among these this course focuses on those which concern the interrelationships among belief, knowledge, evidence, proof, truth, and the problem of scepticism. Prerequisite: two courses in philosophy.

Mr. Overvold, Ms. Waters

Offered every year

241 PHILOSOPHY OF SCIENCE

Examines the systematic answers which philosophers have given to such questions as: What constitutes a scientific explanation? Can inductive inferences be justified? What grounds or reasons justify the claim that one theory is better than another? Are there such things as objective "facts?" Do scientific theories tell us what the ultimate constituents of the universe are? Special attention is given to the views of Hempel, Popper, Kuhn, Lakatos, Feyerabend, and Hesse. Prerequisite: four courses in natural sciences or two courses in philosophy.

Mr. Derr, Mr. Lipton

Offered every year

242 PHILOSOPHY OF LANGUAGE

An analysis of the concepts of reference, meaning, intentionality, intensionality, rules, and the relation of language to thought. Particular attention is given to the speech act approach (Austin, Grice, Strawson, Searle) and to the implications of language theory for the social sciences (Ricoeur, Louch). Some consideration will be given to the philosophical implications of recent developments in transformational-generative grammar (Chomsky, Katz). Prerequisite: two courses in philosophy.

Mr. Lipton, Mr. Shartin

Offered every other year

244 SEMINAR: PHILOSOPHY OF BIOLOGY

Examines such issues as: the structure of evolutionary theory (including the claim, by critics, that it is circular); the role of teleology in biological science; the status of taxonomies; and the reduction of biological theories (e.g., Mendelian genetics) to physical and chemical theories (e.g., molecular biology). Prerequisites: four courses in biology or two courses in philosophy.

Mr. Shartin

Offered every other year

250 SEMINAR: PLATO

This course is an advanced investigation of the major philosophical dialogues of Plato. Typical selections include the *Republic*, *Theaetetus*, *Sophist*, *Statesman*, *Parmenides*, *Euthyphro*, *Phaedrus*, and *Meno*. Prerequisites: two courses in philosophy, including 121.

Mr. Anderson, Mr. Shartin

Offered every other year

251 SEMINAR: ARISTOTLE

This course is an advanced investigation of some central parts of the philosophical system of Aristotle. Among the works examined may be the *Categories*, *On Interpretation*, *Prior Analytics*, *Posterior Analytics*, *Physics*, *De Anima*, *Metaphysics*, *Nichomachean Ethics*, *Politics*, and *Poetics*. Prerequisites: two courses in philosophy, including 121.

Mr. Shartin

Offered every other year

256 SEMINAR: KANT

In this course, students will be introduced to Kant's *Critique of Pure Reason*—the work regarded by many as the most important philosophical text of the last several hundred years. Prerequisite: two courses in philosophy, including 123.

Ms. Waters

Offered every other year

257 SEMINAR: HEGEL

In this course, students will read Hegel's *The Phenomenology of Mind* and selections from his other works. Prerequisites: at least two courses in philosophy, preferably including 123.

Mr. Wright

Offered every other year

259 SEMINAR: HEIDEGGER

In this course, students will read Heidegger's *Being and Time* together with selections from *Kant and the Problem of Metaphysics*, *What is Thinking?* and other works. Prerequisite: three courses in philosophy.

Mr. Overvold

Offered every other year

260 SEMINAR: CASSIRER

An intensive survey of the philosophical works of Ernst Cassirer, concentrating especially upon *The Philosophy of Symbolic Forms* and *The Logic of the Humanities*. Prerequisite: two courses in philosophy.

Mr. Kaplan

Offered every other year

263 SEMINAR: PHILOSOPHY OF MIND

This is a critical examination of the "nature" or concept of mind. Related issues to be considered are: mind/body relationship, the identity theory of mind/brain, the thesis of dualism, and other themes that involve the philosophical examination of psychological phenomena. Prerequisite: two courses in philosophy.

Mr. Overvold, Mr. Shartin

Offered every other year

270 SEMINAR: PHILOSOPHY OF LAW

What is law? Is it "natural," "God-given," or "an artificial contrivance of man?" What is the purpose of law? What ends does it—or should it—serve? Is there a theory of law which can explain such subordinate concepts as rights, duties, liability, responsibility, punishment, and so forth? Is judicial reasoning random, intuitive, or subservient to some set of principles? What is the connection between law and such broader moral concepts as justice? These are some of the questions which will be considered in this seminar. Prerequisite: two courses in philosophy.

Ms. Waters

Offered every other year

272 SEMINAR: CONCEPTS OF THE HUMAN BEING

In this course we will consider some of the diverse answers which philosophers have given to the Psalmist's ancient question, "What is Man?" What kind of thing is a human being? What is a "person?" This course will also consider the problem of defining the moral community. Prerequisite: three courses in philosophy.

Mr. Derr, Ms. Hoff

Offered every other year

275 SEMINAR: PHENOMENOLOGY

This seminar will involve an intensive study of two representatives of contemporary phenomenology: Edmund Husserl and Maurice Merleau-Ponty. Some consideration will be given to other major philosophers within the tradition and to the historical context of the phenomenological movement in general. Prerequisite: at least three courses in philosophy.

Mr. Overvold

Offered every other year

287 SEMINAR: PHILOSOPHY OF THE SOCIAL SCIENCES

This seminar provides a critical and intensive survey of the four alternative accounts of explanation, social reality, and social science put forward by the neopositivist empiricists (Hempel, Nagel, et al.), the phenomenologists (Schutz, et al.), the neo-Wittgensteinians (Winch, Louch, et al.), and the continental hermeneuticists and critical theorists (Habermas, Ricoeur, Gadamer, et al.). Prerequisite: at least four courses in philosophy or graduate status in a social science.

Team taught by Mr. Derr

and Mr. Overvold

Offered every other year

297 ADVANCED TOPICS IN PHILOSOPHY

Offers group discussion, individual tutorials, and independent research in areas of philosophy. The independent research involves a topic of

each student's choice within the designated area. Prerequisite: where appropriate, completion of regular department course(s) in the area; two courses in philosophy; and permission of instructor. Offerings vary each semester. Recent topics have included medieval Jewish philosophy, philosophical issues in logic, explanation in psychology, social welfare theory, and Aristotle's category theory.

Staff Offered every semester

298 CAPSTONE SEMINAR IN PHILOSOPHY

This seminar is required for completion of the major in philosophy. Its theme will be chosen in consultation with participating students, but will be a central philosophical issue around which the students' previous philosophical studies can be integrated. Responsibility for the conduct and presentation of research on the theme will be shared equally by the students and the department faculty. At least two members of the philosophy faculty will normally be involved in the seminar. Open to seniors only. Prerequisite: at least six courses in philosophy. Coordinated enrollment in Philosophy 299 (Senior Thesis) is recommended but not required.

Mr. Derr, Ms. Hoff, Mr. Lipton, Mr. Overvold,
Mr. Shartin, Ms. Waters, Mr. Wright Offered every year

299 SENIOR THESIS

Students undertake an advanced individual study of a selected philosophical problem. The prerequisites, all of which must be fulfilled no later than the middle of the preceding semester, are: (1) permission of the department, which is usually granted only to majors with an academic record of at least B in the major; (2) prior completion of at least six courses in philosophy; and (3) submission and approval of a thesis proposal. The thesis proposal must describe the nature and scope of the proposed project, provide a bibliography of the principal sources the student expects to use, include a schedule for submission of first and final drafts to the adviser and department, and be signed by the student's thesis adviser. Upon completion of the thesis, the department faculty will schedule an oral defense for the student. Variable credit.

Staff Offered every semester

Physics

DEPARTMENT FACULTY

- Christoph Hohenemser, Ph.D., Professor of Physics, Department Chair
- Roy S. Andersen, Ph.D., Professor of Physics
- Harvey Gould, Ph.D., Professor of Physics
- John A. Davies, Ph.D., Associate Professor of Physics
- Robert L. Goble, Ph.D., Research Associate Professor of Physics
- Roger P. Kohin, Ph.D., Associate Professor of Physics
- Peter C. Magnante, Ph.D., Research Associate Professor of Physics
- Gary S. Collins, Ph.D., Research Assistant Professor of Physics
- Christopher P. Landee, Ph.D., Assistant Professor of Physics

Affiliated Faculty

- Michael Klein, Ph.D., Professor of Physics (Affiliate)
- Edward L. O'Neill, Ph.D., Professor of Physics (Affiliate)
- Van Bluemel, Ph.D., Associate Professor of Physics (Affiliate)

THE CURRICULUM

The academic program of the Department of Physics provides opportunities for study and experimental investigation of the basic principles that are fundamental in all science and have led to profound scientific, philosophical, and technological developments in the twentieth century. The department's offerings range from courses that are accessible to students with no previous training in science and little mathematical sophistication to courses at the research frontiers addressing topics of current importance to the research physicist. Laboratories in electronics, optics, energy systems, biophysics, microprocessors, and quantum physics provide opportunities for students to become familiar with experimental techniques. Physics majors may choose one of several areas of specialization, which, together with the core curriculum, lead to the bachelor of arts degree. Undergraduate physics majors are encouraged to work closely with the faculty in research projects at the earliest possible stage of their studies. Graduate students can undertake programs leading to the M.A. and Ph.D. degrees. Formal courses (excluding reading courses and special topics) fall into seven categories, as described below:

1) *Courses for Nonscientists*

These courses are designed to impart a degree of literacy in the physical sciences, acquaint students with the nature of scientific inquiry, and help students understand the impact of science in the contemporary world. The courses are suitable for students with little mathematical background and require limited use of high school level geometry and algebra. Included are Astronomy 1 and 2 and Physics 100, 101, 102, 103, and 104. These courses have no prerequisites and may be taken by students as part of the Introductory Program.

2) *Introductory Courses for Science Students*

Prospective science majors are encouraged to study some physics in their freshman or sophomore years because all contemporary sciences rely heavily on basic physical principles. The first course, Physics 110, is offered each semester and is a prerequisite for all higher level courses. This course, followed by Physics 111 and a laboratory course or by the sequence Physics 112, 113, 114, gives adequate preparation to students requiring a comprehensive overview of physics. Students are encouraged to consult with the departmental undergraduate adviser before registration each semester.

3) *Laboratory Courses*

Laboratory experience is provided at both the introductory and advanced levels. To provide the introductory student with a variety of choices, the department offers four laboratories having no prerequisites other than Physics 110, Introductory Physics, which may be taken concurrently. These laboratories, Physics 118, 119, 128, and 132, acquaint students with techniques, theory, and applications in optics, electronics, biophysics, and energy studies, respectively. More advanced experience is available in the quantum physics, microprocessor, and instrumentation laboratories, Physics 114, 117, and 214, or through special projects or honors courses.

4) *Intermediate Level Undergraduate Courses*

These courses include Statistical and Thermal Physics, Intermediate Mechanics, Electricity and Magnetism, and Atomic and Nuclear Physics. More advanced 200-level courses are also available to students with adequate preparation, and students expecting to enter graduate studies in physics are particularly encouraged to enroll in Physics 201, 202, or

205.

5) Senior Project Courses

The six courses, Physics 231–233, 240, 250, and STS 274, satisfy the departmental senior project requirement. Each course consists of an intensive senior capstone seminar or research experience in a specific area of study.

6) Basic Graduate Courses

These courses form the background for research in all areas of physics and are required for doctoral candidates. The basic graduate courses are Physics 301, 302, 303, 305, 309, and 310.

7) Specialized Graduate Courses

These courses extend the basic graduate courses to the research frontier and are numbered 311 or higher. Students specializing in particular areas may choose those courses relevant to their interests. The courses are given as student demand warrants.

The Undergraduate Major

Undergraduate physics majors may choose from any one of five program areas of study: (1) general physics, (2) experimental physics, (3) mathematical physics, (4) biophysics, and (5) technology assessment. Each program consists of a common core curriculum, normally to be completed by the middle of the junior year, and an area curriculum which defines each student's specialization. Each area curriculum is designed to give students depth in their field of specialization and also to give a perspective on the relation of physics to other fields of knowledge. An essential part of each area curriculum is the senior project consisting of a capstone seminar or research project in the student's area of concentration.

I. Core Curriculum

This curriculum consists of an in-depth survey of classical, quantum, and statistical physics with the associated laboratories and two years of mathematics. Physics majors are expected to have substantially completed this curriculum before their junior year. The core curriculum consists of the following courses:

	Units
1) Introductory level courses, Physics 110 and either 111 or 112	2
2) Second level courses, Physics 113, 123, and 161	3
3) Laboratory courses, Physics 114 and 119	2
4) Calculus, two years through Mathematics 131	4
Total	11

Students with a strong background in physics and mathematics may replace any required courses with appropriate more advanced courses, approved by the departmental undergraduate adviser. Students with advanced placement credit do not receive credit for courses skipped, but may count them toward their major requirements.

II. Area Curricula

Majors must choose from one of the five program areas prior to the beginning of their senior year. The rationale and requirements of the five area programs are as follows:

1) *General Physics*: This program is designed for the student who wishes to major in physics as part of a general liberal arts education and who

does not wish to do graduate study or research in physics or the other basic sciences. The program provides maximum freedom of choice and is an excellent preparation for professional schools, business, and elementary teaching.

Required:	Units
a. Physics Core	11
b. Physics 164 and 174 or two 130 level physics courses	2
c. Mathematics beyond Mathematics 131	2
d. Chemistry	2
e. Related areas: four courses in computer science, science education, history of science, philosophy of science, STS, or other areas approved by the undergraduate physics adviser	4
f. Senior project: Physics 231–250 or STS 274	<u>1</u>
Total	22

2) *Experimental Physics*: This program is designed for students who may wish to pursue graduate study in physics or a closely related area. A principal feature of the program is the requirement of a two-semester experimental research project.

Required:	Units
a. Physics Core	11
b. Physics 162 or 164 and Physics 174 or 176	2
c. Mathematics beyond Mathematics 131	2
d. Chemistry	2
e. Related areas: three courses in computer science, history of science, philosophy of science, biology, STS, or other areas approved by the undergraduate adviser	3
f. Senior project: Physics 231	<u>2</u>
Total	22

3) *Mathematical Physics*: This program is designed for students who wish to pursue graduate study in physics or a related area. A principal feature of the program is the requirement of considerable course work in mathematics and logic.

Required:	Units
a. Physics Core	11
b. Physics 164 and 174	2
c. Physics 205 or Physics 201 and 202	2
d. Mathematics beyond Mathematics 131 involving algebra, complex variables, differential equations, modern analysis, or applied mathematics	3
e. Logic or philosophy of science	1
f. Related areas: chemistry, computer science, biology, STS, or other areas approved by the undergraduate adviser	2
g. Senior project: Physics 232	<u>1</u>
Total	22

4) *Biophysics*: This program is intended for students who wish to obtain a strong background in the physical sciences as preparation for medical school or graduate-level work in the life sciences.

Required:	Units
a. Physics Core	11

b. Chemistry: inorganic, organic, and physical	5
c. Biology	4
d. Biochemistry	1
e. Senior project: Physics 240	<u>1</u>
Total	22

5) *Technology Assessment*: This program is designed to provide students with a sound basis for conducting physical, economic, and value assessments of selected technological systems. The goals of the major are similar to the major in science, technology and society, but feature more extensive work in physical science.

Required:	Units
a. Physics Core	11
b. Physics 132, 164, or 174	1
c. Mathematics beyond Mathematics 131	1
d. Related science: chemistry or biology	2
e. Science, technology, and society	3
f. Related areas: economics, geography, government, philosophy, or other courses approved by the undergraduate adviser	3
g. Senior project: STS 274	<u>1</u>
Total	22

Undergraduate Honors

A qualified undergraduate in any of the major options is encouraged to participate in the physics honors program. During the junior and senior years, honors students conduct an experimental or theoretical research project under the guidance of a faculty member. This work is submitted to the department as an honors thesis. Recommendation for a degree with honors in physics is determined by the quality of each thesis and the performance of students in an oral defense of their thesis. An honors candidate must maintain an average of B – in physics, chemistry, and mathematics courses. Students may gain credit for honors work by registering for Physics 231, 232, or 233.

Additional information on the research interests of the faculty, research facilities, titles of recent undergraduate research projects, and the present activities of recent Clark physics graduates is given in a brochure entitled “The Undergraduate Program in Physics at Clark University,” which is available from the department chairman.

Graduate Program

The Department of Physics offers the masters of arts and doctor of philosophy degrees in physics. Departmental research is concentrated in the experimental and theoretical study of condensed matter; however, other research areas include radiation damage studies, applied physics, plasma physics, and the interdisciplinary areas of risk assessment and energy studies.

The academic aspects of the graduate programs in physics are flexible in nature, with an emphasis on early student participation in research and informal student evaluation. A distinctive part of each student’s course work is Physics 303, a “research apprenticeship,” which introduces the student to research at the earliest possible moment.

Beginning graduate students are required to take a placement examination, which tests their knowledge of undergraduate physics. A student failing this examination may be required to take a remedial

program before entering fully into the graduate program and may be asked to fulfill the requirements of the M.A. before proceeding to the Ph.D.

To receive the M.A. degree, students must satisfy the general University residence and course requirements, pass with a grade of B– or better four units of the basic graduate courses—Physics 301, 302, 305, 309, and 310—one unit of Physics 303, and pass two oral examinations in the subject matter of the basic graduate courses. In contrast to many M.A. physics programs at other universities, the Clark program requires students to complete a thesis based on original research.

To receive the Ph.D., students must, in addition to the University residence and course requirements, pass with a grade of B or better, the basic graduate courses Physics 301, 302, 305, 309, and 310 and two units of Physics 303. The Physics Department does not rely on a formal written qualifying examination to evaluate student readiness for Ph.D. research. Instead, students must pass four oral examinations that stress qualitative as well as quantitative aspects of the subject matter of the basic graduate courses. Students must also pass at least one graduate course in a subject other than physics, demonstrate literacy in a foreign language and computer programming, and complete a dissertation based on original research. Students entering with advanced standing and transferable credit are encouraged to demonstrate their proficiency in core graduation courses through examination.

Graduate students in both the M.A. and Ph.D. programs are required to obtain supervised teaching experience either as teaching assistants or teaching fellows in the department or elsewhere, if approved by the department.

Those interested in further information on the research interests of the faculty and research opportunities for graduate students in the department should request the brochure “Graduate Study and Research in Physics at Clark.” Additional information on graduate requirements and their timing is available in the “Physics Graduate Student Handbook.” Copies of both are available from the graduate student adviser.

Application forms for admission and financial aid may be requested from the department chairman. During the academic year, support is available in the form of tuition remission, teaching assistantships and research assistantships. The department considers the financial support of its graduate students an important responsibility.

COURSES

One course in Astronomy is offered by the department:

Astronomy 1 EXPLORING THE UNIVERSE

Refer to the section on Astronomy for course descriptions.

100 EINSTEIN AND HIS IDEAS

This course introduces students with no special preparation or competence in mathematics and science to the contributions of Einstein to contemporary physics. Much of the course will be devoted to a systematic development of Einstein’s special theory of relativity and its profound implications for our conception of space and time. The remainder

of the course will introduce Einstein's general theory of relativity in which the effects of gravity are described in terms of the curvature of space, Einstein's role in the development of quantum mechanics, and his involvement in political and humanitarian causes. Throughout the course we will seek to gain insight into Einstein as a person and into the nature of the creative process. This course satisfies either the Formal Analysis or the Scientific Perspective requirement in the Introductory Program.

Mr. Gould

Offered every year

101 PARTICLE PHYSICS

A fundamental problem in physics during the past 40 years has been to combine the ideas of relativity and quantum mechanics to give a satisfying picture of the nature of matter. The problem has not been solved; however, much progress has been made. Experiments have identified a surprising number of new kinds of properties of particles, and recent theories have clarified the relationship between these particles. The course will present some of the key developments in a form accessible to students with limited scientific and mathematical backgrounds. The following topics will be treated: introduction to quantum mechanics and special relativity, classification of presently known particles and their interaction, description of some current experiments and their results. An integral part of the course will be a series of laboratory experiments on the important properties of elementary particles. This course satisfies the Scientific Perspectives requirement in the Introductory Program. Prerequisite: permission of instructor.

Mr. Collins, Mr. Goble

Not offered on a regular basis

102 THE PHYSICS OF EVERYDAY EXPERIENCE

This is an introduction to the basic physical concepts necessary for a fundamental understanding of our everyday observations of the physical world and the nature of discovering, reasoning, and concept-formation in the physical sciences. Topics will include the physics of hearing and seeing, matter in motion, heat, electricity and magnetism, the nature of matter, and a study of human's place in the physical universe. The course is directed toward the nonscientific-oriented student. There are three lectures per week plus an open, informal laboratory. This course satisfies the Scientific Perspectives requirement in the Introductory Program.

Mr. Andersen

Not offered on a regular basis

103 IDEAS OF QUANTUM PHYSICS

This course introduces students to the conceptual foundations of the quantum theory of matter. It will discuss the experimental evidence for the failure of classical theory, the properties of electrons and photons, wave particle duality, the Heisenberg uncertainty principle and the theory of measurements, the statistical interpretation of quantum mechanics, the complementarity principle, and the meaning of determinism and causality in quantum physics. Particular attention will be given to various paradoxes in the interpretation of quantum mechanics and the fundamental objections raised by Einstein and others in its interpretation. The development of the theory is qualitative and will utilize only elementary algebra to simplify and clarify the presentation. The course is open to all students and satisfies the Scientific Perspective requirement in the Introductory Program.

Mr. Kohin

Offered every other year

104 THE NATURE OF PHYSICAL SCIENCE

It is the purpose of this course to examine two fundamental and important questions: "What is natural science?" and "How do natural scientists look at the world?" Students will seek answers to these questions by means of a case study involving a scientific revolution in physics. Although an important part of this course will involve a historical study of the approaches to the problems faced by science, sufficient time also will be spent on the scientific discoveries themselves to enable students to appreciate the complexity of the questions scientists must consider in evaluating and explaining observational data. This course is open to all students and has no prerequisites. It satisfies the Scientific Perspective requirement in the Introductory Program. Crosslisted with Philosophy 140.

Mr. Andersen, Mr. Derr

Offered every year

110 INTRODUCTORY PHYSICS—PART I

This is a problem oriented course for science majors and for the general student desiring a rigorous survey of physics. The course stresses the simplicity and self-consistency of physical models and mathematical laws in explaining a variety of phenomena. Topics first semester include Newtonian mechanics, wave motion, and an introduction to statistical and thermal properties of matter. Calculus is not required for students in this course although some of the elements will be developed during the semester. The course may be followed by either Physics 111 or 112 depending on the particular goals of the student. Together with Physics 111 and a laboratory course it fulfills the normal entrance requirements for medical and dental schools. This course satisfies the Formal Analysis requirement in the Introductory Program and is a prerequisite for more advanced courses. There are three lectures and one discussion section each week.

Mr. Andersen, Mr. Kohin, Mr. Landee

Offered every semester

111 INTRODUCTORY PHYSICS—PART II

This course is a continuation of Physics 110 and includes electricity, magnetism, optics, relativity, atomic and nuclear physics. Students who do not intend to take a second year of physics should enroll in this course in preference to Physics 112. It has three lectures and one discussion section each week.

Mr. Kohin, Mr. Landee, Mr. Magnante

112 CLASSICAL PHYSICS

This course is a continuation of Physics 110 for students desiring a more mathematically complete introduction to physics. It explores topics at a greater depth and at a more advanced level than Physics 111. Topics covered are electricity, magnetism, optics and a brief introduction to special relativity. This course is followed by Quantum Physics, Physics 113, 114; students expecting to obtain an introduction to all areas of physics should continue with this sequence. There are two lectures and two tutorial sessions per week. Corequisite: Mathematics 121. Credit for both Physics 111 and 112 is not given.

Mr. Gould

Offered every year

113 QUANTUM PHYSICS

This is a third semester introductory course in physics to follow either Physics 111 or 112. This course introduces the concepts of quantum

physics with applications to the microscopic world. The philosophical implications of the theory are discussed. This course is appropriate for biology, philosophy, and STS majors as well as for physics and chemistry majors. Prerequisite: Physics 111 or 112 and Mathematics 121 or permission of the instructor.

Mr. Collins

Offered every year

114 QUANTUM PHYSICS LABORATORY

This course is a continuation of Physics 113 focusing on the experimental determination of the properties of elementary particles or other microscopic systems and providing an introduction to modern research instrumentation. Departmental facilities including the machine shop, electronics facility, and computer terminals are available. One lecture and two laboratory sessions per week. Prerequisite: Physics 113.

Mr. Hohenemser

Offered every year

117 MICROPROCESSOR LABORATORY

This is a laboratory course which involves the utilization of microprocessors as devices for the collection and analysis of scientific data. The course begins by investigating the fundamentals of digital electronics, then moves rapidly to the use of microprocessors. Emphasis is given to interfacing techniques. Two lectures and one laboratory meeting per week. Prerequisite: Physics 119.

Mr. Landee, Mr. Andersen

Offered every year

118 OPTICAL PROJECTS LABORATORY

This is an introductory laboratory covering the principles, applications, and techniques of modern optics. Projects will treat imaging and photographic techniques, basic optical instruments including the microscope, lasers and holograms, optical communication using fiber optics, and interaction of light with matter. This course is of interest to biology, geography, and psychology majors, as well as to physics and chemistry majors. It satisfies the physics laboratory requirement for premedical and predental students. There are two tutorial sessions and one laboratory per week. Prerequisite: Physics 110.

Mr. Kohin

Offered every year

119 ELECTRONICS LABORATORY

This is an introductory laboratory course in electronics, the goal of which is to build and understand several simple circuits using discrete and integrated solid state elements. The course will begin with the fundamentals of DC and AC circuit theory and the use of basic test instruments such as the oscilloscope. Special emphasis will be given to operational amplifier techniques. This course satisfies the physics laboratory requirement for premedical or predental students. There are two lectures and one laboratory per week. No prerequisites other than algebra.

Mr. Landee

Offered every year

123 STATISTICAL AND THERMAL PHYSICS

This is an introduction to the concepts of statistical and thermal physics including statistical mechanics, thermodynamics, and kinetic theory. The course includes an introduction to the laws of thermodynamics and their basis in atomic theory. Much of the course will be practical in nature and stress application in such areas as energy-related problems.

The course should be appropriate for majors in STS, biology, physics, mathematics, and chemistry, as well as students in other areas who have an appropriate mathematics background. Prerequisite: Physics 111 or 112; corequisite: Mathematics 131.

Mr. Davis

Offered every year

128 BIOLOGICAL PHYSICS LABORATORY

This is a laboratory course designed to introduce students in biology or in the premedical/predental program to the physical principles underlying biological systems. Students will become familiar with the instrumentation, analysis, and reporting of experiments on a range of biological phenomena. Experiments will utilize mechanical, thermal, electronic, optical, and nuclear techniques. The computer will be used to analyze data. The course satisfies the physics laboratory requirement for premedical or predental students. There are one lecture and one laboratory meeting per week. Prerequisite: Physics 111 or 112.

Mr. Andersen

Offered every other year

130 ENERGY SOURCES AND SYSTEMS

Refer to course description under STS 130.

131 SOLAR ENERGY

Refer to course description under STS 131.

132 ALTERNATIVE ENERGY SYSTEMS LABORATORY

Refer to course description under STS 132.

161 INTERMEDIATE MECHANICS

This is an intermediate level course intended for physical science majors. It will develop the concepts of particle dynamics and emphasize applications of these principles to macroscopic systems. Topics will include relative motion and the Coriolis force, rigid body mechanics and wave motion. Prerequisites: Mathematics 131 and Physics 111 or 112.

Mr. Kohin

Offered every year

164 ELECTRICITY AND MAGNETISM

This is an intermediate level course dealing with the electromagnetic field. This course develops the phenomenology and theories leading to the formulation of Maxwell's equations. Scalar and vector potential theory, the elements of radiation dynamics, and relativistic covariance are discussed. Prerequisite: Physics 112 and Mathematics 131.

Mr. Kohin

Offered every year

174 ATOMIC AND NUCLEAR PHYSICS

This is an intermediate level course introducing elementary quantum mechanics and emphasizing the applications of the theory to atomic, nuclear, molecular, and particle physics. Prerequisites: Physics 113 and Mathematics 131.

Mr. Magnante

Offered every year

188 INDEPENDENT STUDY

This course consists of readings or projects in experimental or theoretical physics directed by a faculty sponsor. Offered for variable credit.

Staff

Offered every semester

201 CLASSICAL DYNAMICS

This is a course designed to prepare the physics major for graduate work in physics. Topics covered include Hamilton's principle, classical scattering theory, rigid body motion, canonical transformations, Hamilton-Jacobi theory, and mathematical methods of physics. The lectures are the same as in Physics 301, but evaluation is separate. Prerequisite: Physics 161 and 174.

Mr. Klein

Offered every year

202 CLASSICAL ELECTRODYNAMICS

This is a course designed to prepare the physics major for graduate work in physics. Topics covered include boundary value problems in electrostatics and magnetostatics, the electromagnetic field equations and special relativity, electromagnetic waves, radiation theory, multipole fields, and mathematical methods in physics. The lectures are the same as Physics 302, but evaluation is separate. Prerequisite: Physics 164.

Mr. Bluemel

Offered every year

205 QUANTUM MECHANICS

This is a course designed to prepare the physics major for graduate work in physics. The mathematical framework of quantum mechanics is covered. The lectures are the same as in Physics 305, but evaluation is separate. Prerequisites: Physics 174 and Mathematics 131. A full year course.

Mr. Gould

Offered every year

209 STATISTICAL MECHANICS

This is a course designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309, but evaluation is separate. Prerequisites: Physics 123 and 174.

Mr. Gould

Offered every other year

214 PHYSICAL INSTRUMENTATION LABORATORY

This is an introduction to modern physical research instrumentation. The course deals with the advanced interpretation of physical measurements in modern physics and is the same as Physics 114, except that interpretation of experiments is at the advanced undergraduate or beginning graduate level. Undergraduates who have completed 114 may register for 214.

Mr. Hohenemser

Offered every year

230 DIRECTED READINGS IN PHYSICS

These directed readings in physics will provide for special needs not covered in regular courses. Offered for variable credit.

Staff

Offered every semester

231 SPECIAL PROJECTS IN EXPERIMENTAL PHYSICS

These are independent laboratory projects done under the guidance of a faculty adviser. Offered for variable credit.

Staff

Offered every semester

232 SPECIAL PROJECTS IN THEORETICAL PHYSICS

These are independent projects in theoretical physics done under the guidance of a faculty member. Offered for variable credit.

Staff

Offered every semester

233 SPECIAL PROJECTS IN APPLIED PHYSICS

These independent projects in applied physics are done under the guidance of a faculty adviser. Offered for variable credit.

Staff

Offered every semester

240 TOPICS IN BIOPHYSICS

This is a course specifically designed for the senior physics major in the biophysics area program. The principles of biology, chemistry, and physics are applied to a variety of biological phenomena.

Mr. Andersen

Offered every year

250 SENIOR SEMINAR

This capstone meets jointly with students registered for Physics 231, 232, and 233 to discuss the progress of individual student projects, to review the current literature, and to discuss research methods. Offered for variable credit.

Staff

Offered every year

GRADUATE COURSES

301 CLASSICAL DYNAMICS

This is a graduate-level course in classical mechanics. The topics covered are similar to Physics 201 but are treated in greater depth.

Mr. Davies

302 CLASSICAL ELECTRODYNAMICS

This is a graduate-level course in classical electromagnetic theory. The topics covered are similar to Physics 202 but are treated in greater depth.

Mr. Bluemel

303 RESEARCH APPRENTICESHIP

An apprentice will have direct participation in the experimental and theoretical research groups of the department. The student spends 7 to 14 weeks working in a variety of research groups. Ph.D. students should enroll in the course for two semesters; M.A. students for one semester.

Staff

305 QUANTUM MECHANICS

This is a comprehensive course in quantum mechanics. Topics include the Schrödinger equation and the general structure of wave mechanics, symmetries and angular momentum, potential scattering, perturbation theory, interaction of radiation with matter, spin, second quantization, and an introduction to many-body theory. A full year course.

Mr. Gould

309 STATISTICAL MECHANICS

This is a comprehensive course in statistical mechanics and kinetic theory. Topics treated include ensembles, principles of thermodynamics, classical equations of state for interacting classical fluids, Mayer cluster expansion, classical lattice models, the Fermi distribution and the ideal degenerate electron gas, the Bose distribution and the Bose-Einstein condensation, mean field theory of continuous phase transitions, simple applications of the renormalization group, and the Boltzmann equation.

Mr. Gould

310 SOLID STATE PHYSICS

This is an introduction to the quantum theory of solids. Topics covered include free electron theory of metals, crystal and reciprocal lattices, band structure and the Fermi surface, lattice dynamics, insulators, and semiconductors. Prerequisites: Physics 305 and 309.
Mr. Hohenemser

311 ADVANCED QUANTUM MECHANICS

This course includes relativistic quantum mechanics, quantum electrodynamics, and the many-body problem. Prerequisite: Physics 305 or equivalent.
Mr. Davies

312 APPLICATIONS OF GROUP THEORY TO PHYSICS

This is a representation theory for finite groups. Applications to crystallographic point groups. Representations of continuous impact groups: the rotation group. The Wigner-Eckart theorem and selection rules. The permutation group and its application to the system of identical particles. Classification of states of a multi-electron atom.
Mr. Kohin

314 THEORY OF MANY-PARTICLE SYSTEMS

The equilibrium and linear response properties of many-body systems are studied at zero and nonzero temperatures using memory function techniques and thermodynamic Green's functions. Applications are made to degenerate Fermi liquids, superfluid ^4He , and superconductivity.
Mr. Gould

315 CRITICAL PHENOMENA

This is a review of recent experimental results in magnetic, liquid-gas, and structural phase transitions. General behavior of continuous phase transitions, critical indices, scaling laws, and universality. Ginzburg-Landau-Wilson model, mean field approximation, renormalization group, perturbation expansions, real-space calculations, dynamic behavior, application of renormalization group to other problems are studied.
Mr. Gould, Mr. Hohenemser

317 SOLID STATE SPECTROSCOPY

This is a theoretical and experimental review of the physics of solids observed using spectroscopic methods.
Staff

325 RESEARCH SEMINAR

This is a student participation seminar in current research problems. Offered for variable credit.
Staff

330 TOPICS IN EXPERIMENTAL PHYSICS

A specific topic in experimental physics is considered at the research level. Topics are selected on the basis of current interest. Offered for variable credit.
Staff

335 TOPICS IN THEORETICAL PHYSICS

A specific topic in theoretical physics is considered at the research level. Topics are selected on the basis of current interest. Offered for variable credit.

Staff

340 COLLOQUIUM

Weekly invited lecturers speak on research topics of current interest. Required for all graduate students. Not offered for credit.

Staff

350 RESEARCH

Thesis and dissertation preparation. Offered for variable credit.

Staff

Psychology

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., G. Stanley Hall Professor of Genetic Psychology, Department Chair

Mortimer H. Appley, Ph.D., Professor of Psychology, President of the University

Robert W. Baker, Ph.D., Professor of Psychology

Roger Bibace, Ph.D., Professor of Psychology

Tamara Dembo, Ph.D., Professor of Psychology, Emeritus

Joseph H. deRivera, Ph.D., Professor of Psychology

Rachel Joffe Falmagne, Ph.D., Professor of Psychology

Bernard Kaplan, Ph.D., Professor of Psychology, Adjunct Professor of Philosophy, Adjunct Professor of Comparative Literature

Donald G. Stein, Ph.D., Professor of Psychology

David A. Stevens, Ph.D., Professor of Psychology

Ina C. Uzgiris, Ph.D., Professor of Psychology

Morton Wiener, Ph.D., Professor of Psychology

Leonard E. Cirillo, Ph.D., Associate Professor of Psychology

William Damon, Ph.D., Associate Professor of Psychology

James D. Laird, Ph.D., Associate Professor of Psychology

Nicholas S. Thompson, Ph.D., Associate Professor of Psychology and Ethology

Marianne Wiser, Ph.D., Assistant Professor of Psychology

ADJUNCT FACULTY

Edward E. Sampson, Ph.D., Professor of Sociology and Adjunct Professor of Psychology

David Zern, Ph.D., Associate Professor of Education and Adjunct Associate Professor of Psychology

AFFILIATED STAFF

Nelson M. Butters, Ph.D., Professor of Psychology, Affiliate

R.J.O. Catlin, M.B., L.R.C.G.P., Professor of Psychology, Affiliate

Harold Goodglass, Ph.D., Professor of Psychology, Affiliate

Davis H. Howes, Ph.D., Professor of Psychology, Affiliate

Edith F. Kaplan, Ph.D., Professor of Psychology, Affiliate

Martin Albert, Ph.D., Associate Professor of Psychology, Affiliate

Robert A. Ciottone, Ph.D., Associate Professor of Psychology, Affiliate
 Marlene Oscar-Berman, Ph.D., Associate Professor of Psychology, Affiliate
 Marilyn S. Albert, Ph.D., Assistant Professor of Psychology, Affiliate
 Michael P. Alexander, M.D., Assistant Professor of Psychology, Affiliate
 David Bear, M.D., Assistant Professor of Psychology, Affiliate
 Michael Biber, Ph.D., Assistant Professor of Psychology, Affiliate
 Hiram Brownell, Ph.D., Assistant Professor of Psychology, Affiliate
 Deborah Fein, Ph.D., Assistant Professor of Psychology, Affiliate
 Jane M. Healey, Ph.D., Assistant Professor of Psychology, Affiliate
 Jane Holmes, Ph.D., Assistant Professor of Psychology, Affiliate
 Deborah S. Kellett, Ph.D., Assistant Professor of Psychology, Affiliate
 Jacqueline Liederman, Ph.D., Assistant Professor of Psychology, Affiliate
 Lise Menn, Ph.D., Assistant Professor of Psychology, Affiliate
 Margaret Naeser, Ph.D., Assistant Professor of Psychology, Affiliate
 Loraine Obler, Ph.D., Assistant Professor of Psychology, Affiliate
 Lawrence Peterson, Ph.D., Assistant Professor of Psychology, Affiliate
 Ogretta V. McNeil, Ph.D., Fellow, Heinz Werner Institute
 Angel Pacheco, Ph.D., Fellow, Heinz Werner Institute
 Robert B. Shilkret, Ph.D., Research Associate
 Mary Walsh, Ph.D., Clinical and Research Associate
 Roy D. Pea, D. Phil., Research Assistant Professor of Psychology

UNDERGRADUATE PROGRAM

The department has emphasized, in undergraduate courses and research, the same respect for scholarship as it has at the graduate level. The aims of the undergraduate program are: to promote respect for intellectual activity, to encourage an attitude of intelligent inquiry, and to highlight the implications of psychological knowledge for an understanding of everyday phenomena. The department offers educational experiences that will enhance the students' liberal arts background and prepare them for graduate work in psychology or related disciplines.

Course Numbers: Ranges of course numbers have specific meanings according to the following key:

<i>Range</i>	<i>Meaning</i>
100–109	Courses all majors must take (General, Quantitative Methods)
110–149	Survey courses; psychology as a life science
150–189	Survey courses; psychology as a social science
190–199	Special freshman and sophomore courses
200–214	Laboratory courses
215–229	Research courses
230–234	More advanced courses; psychology as a life science
235–239	More advanced courses; psychology as a social science
240–259	Primarily junior and senior specialized seminars (may not be taken for graduate credit without special permission)
260–289	Primarily junior, senior, and graduate specialized seminars (may be taken for graduate credit without special permission)
290–299	Special courses (honors, directed readings, research)

Unless otherwise stated, Psychology 101 is a prerequisite to all other Psychology courses.

Major Requirements. The major in psychology consists of psychology

and related course requirements. The psychology requirements are designed to insure exposure to one of the most basic distinctions in contemporary psychology, that of psychology approached as a life or a social science, to insure some familiarity with experimental and observational methods (laboratory and practicum requirement), to provide background in essential quantitative skills (statistics requirement—Psychology 105), and to guarantee several contacts with faculty in advanced, small-enrollment seminars.

The related requirement of two minors reflects the conviction of the department that all academic areas are actually or potentially related to psychology, but also that scholarship involves, at some point, studying subject matter in considerable depth.

1. *Psychology Courses*

Total of at least eight full-course equivalents, including:

- a. 101, General Psychology
- b. 105, Quantitative Methods
- c. One full-course equivalent from range 110–149 or 230–234
(Survey courses: psychology as a life science)
- d. One full-course equivalent from range 150–189 or 235–239
(Survey courses: psychology as a social science)
- e. Two full-course equivalents from range 200–229
(laboratory and research courses)
- f. Two full-course equivalents from range 240–289
(upper level seminars)

2. *Related Courses*

Related courses are defined in terms of minors. A minor consists of at least four full-course equivalents in a single area or department. Two minors must be chosen from the following areas or departments:

Biology
Chemistry
Comparative Literature
Engineering, Applied Math, or Computer Science
Economics
Education
English
Foreign Languages and Literatures (includes Linguistics)
Geography
Government and International Relations
History
Management
Mathematics
Philosophy
Physics
Science, Technology and Society
Sociology
Visual and Performing Arts
Women's Studies

There are two restrictions on permissible course sequences within an area or department:

- a. In the case where a department offers more than one introductory course, only the course or courses designed to prepare students for further work in the area may be taken for related credit. In most departments, this excludes introductory courses designed for non-

majors. Detailed information about this restriction may be obtained from the Department of Psychology.

- b. The courses must form a coherent sequence or program within the context of the department in which a minor is taken. In most cases, this will be self-evident. However, in doubtful cases, the student must consult his or her psychology adviser and the department concerned.

The Honors Program. Honors work in psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the honors program by requesting the faculty member under whose direction students intend to do research work to submit their names to the full faculty for consideration. Students in the honors program carry out an independent empirical research project under the sponsorship of one or more faculty members. This research provides a basis for a thesis, which, upon completion, is presented and defended by the students before an Examining Committee of faculty members. On the basis of the report of the Examining Committee and the students' advisers for the project, the department may recommend to the College Board that the students be awarded departmental honors at one of the following levels: highest honors, high honors, or honors in psychology.

DOCTORAL PROGRAM

General Requirements. The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. The overall aim of the graduate program is to provide students with a general integrated background covering the various areas of psychology. Within these emphases there are several specialized programs available.

The lack of rigid boundaries between specialty areas and the lack of carefully specified curriculum sequences require, in students, a continuous process of self-definition regarding the form of their graduate training.

An advisory committee of two faculty members is appointed for each student, and it is expected that student and advisory committee will regularly review the student's progress and plans. However, our experience clearly indicates that there are persons who have difficulty tolerating the ambiguities in this kind of situation, and applicants are urged to assess themselves carefully in relation to the personal demands of such a setting.

Several different traditions and points of view toward the study of psychology are represented in our department, the most distinctive of which are the organismic-developmental approach (e.g., Heinz Werner) and the Piagetian approach. Rather than any theoretical allegiance, however, the most important feature of the department's intellectual character is the emphasis on theory and metatheory and their connection to empirical research. In all the department's programs, including clinical and rehabilitation psychology, there is a primary concern with theory, conceptual analysis, and research. The department is also somewhat unusual in American psychology in the diversity of methods of investigation used by faculty and graduate students in their work, as well as the continuing attempts to integrate these methods and their products into larger theoretical understanding. These methods include, for example, a number of kinds of conventional experimental ap-

proaches, as well as phenomenological methods, hermeneutical approaches, and naturalistic observation. Participation in research is strongly encouraged all through the graduate experience, and the nature of the research is determined primarily by a common interest of each student with that of a faculty member. The student is expected to contribute significantly to the conceptualization, design, execution, analysis, and writing-up of the work.

Advisory Committee. A committee consisting of two full-time faculty members will be assigned to help each student plan his/her curriculum to best meet needs and goals. This committee will consist of one faculty member whose work is closest to the student's research interests, and one other assigned by the department. The committee may change or waive any of the requirements except the M.A. thesis, major paper, Ph.D. dissertation or any requirements of specific training programs, but ordinarily its function is to assist the student to select a curriculum from within the normal requirements.

Course work. Students ordinarily are expected to take four courses in each semester for their first two years, including in their first year Problem, Theory, and Method in Psychology (301) and Statistical Methods (302). In subsequent years, students continue to enroll in a full program which ordinarily includes two or three content courses, research and reading courses, etc. A total of at least 18 one-semester courses is required for admission to candidacy for the Ph.D., of which at least two must be from among a group including personality, social, developmental, phenomenological, and cognition, and at least two must be from among the group including physiological psychology, learning, perception, and animal behavior.

To provide a basis for evaluation of students' progress early in their careers, all students are required to write two papers (or equivalent) during each of their first four semesters, except that they need not write such papers during the semester in which they complete their M.A. thesis. Papers may be required by instructors in all or none of a student's courses. In the latter case, the student is required to submit papers in a minimum of two courses. Early in the semester, before writing the paper, the student should discuss the proposed content with the instructor. In some cases, the instructor may substitute some other "evaluatable performance" (e.g., an examination) for a paper. Note that it is the student's responsibility to ensure that the instructors in at least two of his/her courses understand that she/he intends to submit these papers to them. It is the instructor's responsibility to define what constitutes an adequate fulfillment of this requirement. The student is also responsible for informing the department office, before the end of the semester, what papers will be submitted and which instructor will evaluate those papers. If students have any questions they should consult the instructor or their advisory committee.

Qualifying examination in quantitative methods. All students are required to demonstrate competence in quantitative methods by satisfactory performance on a qualifying examination in that area. The examination is normally taken at the end of the student's first year, at the completion of the course in quantitative methods.

M.A. degree. The M.A. degree is awarded after satisfactory completion of at least eight one-semester courses or their equivalent, the departmental paper requirement, an M.A. thesis based on the collection and analysis of data, and an oral examination on the thesis. The thesis is expected to be relatively brief, and to be in the form of an article suitable

for submission to a journal appropriate for the kind of work. All of these requirements for the M.A. degree must be completed by the end of the second year of graduate study. Students who have not completed their M.A. degree by the end of the second year will not be permitted to enroll as resident students for the third year. A student who does not complete the M.A. degree by the end of the third year ordinarily is not permitted to continue in the Ph.D. program, but will be given ample opportunity to complete a "terminal" Masters degree.

Major paper and oral examination. The major paper is normally to be done within one year after completing the M.A. This paper is expected to demonstrate mastery of research and theory in the student's area of specialization. To facilitate completion, the student is encouraged to enroll in Directed Readings with a faculty member during one or both of the semesters in which the paper is to be completed. An oral examination of this material will also be held shortly after the paper has been submitted. If the paper is not finished on time, the faculty will select some of its members to give additional help to the student during the summer. If a student does not complete the paper before September of the fourth year, the student will not be permitted to enroll as a resident student for that year or until the paper is completed.

Admission to Ph.D. candidacy. Satisfactory completion of at least 18 one-semester content courses (including 301 and 302), as well as the above requirements, is necessary for admission to candidacy for the Ph.D. degree. All the requirements for Ph.D. candidacy, including the major paper, must be met within two years of completing the M.A. A student who does not do so ordinarily will be dropped from the Ph.D. program.

Ph.D. dissertation. The student demonstrates the ability to conduct research by the presentation of an acceptable dissertation. The topic of the dissertation usually is selected by the student working with one or more members of the faculty. Once the student has worked out a general research plan, a committee is formed to assist and supervise in all phases of the research effort—final plan, data analysis, writing, etc. After the committee has reviewed the dissertation proposal carefully, the proposal is circulated to all other members of the faculty for their comments and suggestions. The dissertation committee will then approve the final form of the proposal before the student begins the collection of data and other writing. After completion of the data collection, etc., the student submits a draft of the dissertation to the committee who will aid the student in making necessary revisions. When the committee decides that the dissertation is complete and ready for presentation, copies are then circulated to the departmental faculty.

Ph.D. oral examination. Following submission of the dissertation to the department, a final oral examination is held in which the student presents and defends his/her dissertation and shows competence in a general field of psychology as well as in his/her area of specialization.

These guidelines result in an upper limit of six years for completion of the Ph.D. (excluding an internship year or official leave). An additional year may also be granted by faculty approval of a petition on other grounds such as part-time study because of financial necessity. Those desiring more detail on graduate requirements and their timing should request a copy of "Information on the Graduate Program in Psychology."

Training Program in Clinical Psychology. The basic philosophy in the training of clinical psychology students, as for all graduate students in

the department, is that specialization, necessary as it is, is a process of individuation and emphasis rather than one of restriction, isolation, or compartmentalization. Our aim is to provide an integrated series of intensive educational experiences in class, in laboratory, and in practicum clinical settings (in the University and other agencies) in which specialist training in clinical psychology is attained against a background of increasing competence in general psychology, theory, and research.

In addition to the more traditional opportunities, the program offers: (1) child clinical; (2) human neuropsychology; (3) family interactions. The program has, in addition to the general requirements, the following special requirements. Each student must take at least one course from each of three areas: (1) biological bases of behavior (e.g., physiological psychology, behavior and evolution, human neuropsychology); (2) cognitive-affective bases of behavior (e.g., symbolism, cognitive development, logical reasoning, action and emotion); and (3) social bases of behavior (e.g., interpersonal relations, social cognition). Each student must take the following courses in individual behavior: Theories of Personality (324), Psychopathology (312), and Theories of Psychotherapy (332). Each student must complete a minimum of one year of internship in clinical settings; the student may satisfy this requirement by a full-time internship in the third or fourth year or by a "distributed" internship, part-time over several years. All clinical students participate for four years in the Psychological Services Center, a department-operated training agency offering psychodiagnostic and psychotherapeutic services to members of the Clark community. For further information contact one of the program's codirectors, Dr. Leonard Cirillo or Dr. Morton Wiener.

Developmental Psychology Program. The Developmental Psychology Program is intended to prepare students for a career in research, teaching, and scholarly activity. It strives to impart competence in both theoretical sophistication and empirical, experimental, and comparative inquiry with regard to developmental issues. The focus of the program is on ways of representing and examining all life phenomena rather than focusing exclusively on a particular population (e.g., infants, children, adults) or a specific subject matter. Within this general framework, however, the program does offer in-depth training with special populations and in specific areas (cognitive processes, language, symbolization, social conceptions, mother-infant interactions, logical reasoning, psychopathology, collective phenomena, etc.). In addition to a nursery school associated with the University, a modern laboratory provides a facility for both empirical and clinical research with children.

Since there are no sharp separations between different programs within the department, students who work primarily in the developmental program have the opportunity to become competent in the variety of methodologies (naturalistic, experimental, historical, clinical, phenomenological, hermeneutic) which enter into developmental analysis. For further information contact the program director, Dr. Bernard Kaplan.

Social-Personality Psychology Program. Perhaps the most distinctive feature of the social-personality program is its emphasis on the description and analysis of social *experience*. While we are also interested in how persons behave, we have a concern for experience in its own right. The faculty members most directly involved in the program have developed different research strategies that tap into the experiences of everyday life—e.g., the approach of topological and vector psychology to un-

derstand the social-emotional aspects of interpersonal relations and values as experienced by the participants; the phenomenological method to investigate emotions and the role of affective experiences in the choices that persons confront as they lead their lives; and the experimental approach to deal with the question of how persons come to know and experience themselves and to investigate the structure and function of this self-knowledge. Other members of the department provide an extremely important balance and supplement to these strategies in light of the lack of boundaries between programs and the fact that a good deal of research in other areas often involves social psychological topics. While there are no formal requirements in the social-personality program, each student is expected to become acquainted with the main approaches to experience mentioned above and is encouraged to participate in seminars with as many different faculty members as possible. For further information contact the program director, Dr. Joseph deRivera.

Experimental Psychology Program. Training is offered in the general areas of perception, cognitive psychology, and animal and human learning, according to a flexible sequence of courses and seminars covering the theoretical foundations, content, and methodology of these areas as well as specialized topics. The typical orientation in teaching and research is an integrative one, preserving and exploring the connections between these traditionally defined areas and other areas of psychology (developmental, ethology, phenomenology, etc.). The emphasis of the program is on the acquisition of both theoretical and empirical skills. Towards this end, specialized seminars are offered in or around the areas of special interest of various faculty members: participation in ongoing research projects is encouraged, as is research generated by students' interests.

Some of the current research interests of the faculty associated with experimental training include: motivation and stress; thinking, symbolization and language; reasoning and language; learning and memory; cognitive processes; development of logical abilities; the chemical senses (taste and smell); animal discrimination learning and motivation; infant learning and perception; environmental perception and cognition and planning behavior; communication behaviors—verbal and non-verbal; social cognition and visual perception. Facilities for research in experimental psychology include a departmental PDP-12/30 laboratory computer with an FPP-12, a large amount of closed-circuit video equipment, a Wang 2200 calculator, as well as the specialized apparatus used by investigators in the various areas of faculty interest.

Because of the relatively small student population and the active research involvements of the faculty, students have the opportunity to work closely with one or more faculty members in the experimental group or in other areas in the department. Though specialization is advisable, cross-fertilization from other areas is highly encouraged. In teaching and research in these areas, the faculty involved aim at preserving the continuity with both the mainstream of ongoing psychological research and the values and perspectives traditional to Clark, which emphasize conceptual sophistication and theoretical relevance. For further information write to Dr. Rachel Joffe Falmagne.

Psychobiology Training Program. The program in psychobiology has two major foci: physiological psychology and animal behavior. Regardless of area, students are encouraged to begin research as soon as possible after acquiring an understanding of the theoretical basis of an

area and the implications of the work. Although the training is often intensive, emphasis is on a close working relationship among faculty, graduate students, and undergraduates. There are many opportunities for collaboration on major research projects including studies on: behavioral recovery from brain damage, psychobiology of aging, effects of drugs and hormones on central nervous system development and neuroplasticity, naturalistic observation of various species of birds, and communication and motivation in rats. The laboratory facilities are excellent and include a major new installation for neuroanatomical investigation at the University of Massachusetts Medical Center as well as various local facilities for field studies of free ranging species. Through the consortium, and with permission, students may enroll in courses offered at cooperating institutions including University of Massachusetts Medical Center. For more information on training in physiological psychology write to Dr. Donald Stein; for more information on animal behavior, write to Dr. David Stevens or Dr. Nicholas Thompson.

Rehabilitation Research Training. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigations of psychological problems as they occur in everyday life. Emphasis on the development of novel techniques and concepts is the main feature of the training. An integral part of the training is an apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This training is especially pertinent to those who are interested in social-emotional and value problems of handicapped and nonhandicapped people. For further information, write to Dr. Tamara Dembo or Dr. Joseph deRivera.

Interdisciplinary work: The department recognizes the interest of some students to undertake study and research which cuts across disciplines or areas that now exist. Interdisciplinary activity by students is feasible at Clark inasmuch as some members of the psychology faculty are now, or recently have been, engaged in activities with faculty of other departments.

Applicants for graduate study in psychology who are interested in securing more detailed information concerning the department and its programs are urged to write to the department for a brochure, "Information on the Graduate Program in Psychology."

POSTDOCTORAL PROGRAM

The Psychology Department and the Heinz Werner Institute have a postdoctoral program for training in developmental psychology. In addition to individually oriented research and training opportunities, the developmental faculty offers a seminar for postdoctoral students.

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on postdoctoral levels in the comparative-developmental approach to behavior.

COURSES

101 GENERAL PSYCHOLOGY

Introduction to the principles of human behavior. No prerequisite. Unless otherwise noted, this course is a prerequisite to all other psychology offerings.

Mr. Wapner

Offered every semester

105 QUANTITATIVE METHODS

Introduction to the theory and methods of statistical inference and the logic of experimental design.

Staff

Offered every semester

130 PSYCHOLOGY OF LEARNING

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.

Mr. Stevens

Offered every year

135 PRINCIPLES OF BEHAVIORAL EVOLUTION

Evaluates a new evolutionary perspective called sociobiology by examining Darwinian theory as it applies to animal social organizations. The course redefines such concepts as natural selection, adaptation, communication, personality, emotions, grouping, and territoriality as they apply to animal behavior. This course is run with much class discussion and emphasis on questioning theories, constructing new models, and arriving at new, clearer definitions. Prerequisite: Introductory Biology or Psychology normally required, but open to freshmen with special qualifications; please see instructor. Also listed for credit as Biology 182.

Mr. Thompson

Offered every year

140 SENSATION AND PERCEPTION

This course combines sensory and perceptual topics in psychology to provide a solid background in experimental psychology. The sensory physiology and sensory processes underlying both major and minor senses are covered as well as psychophysical techniques of measurement. Topics in perception include: the perception of form and space, the influence of learning and development on perception, and special perceptual states.

Ms. Wiser

Offered every year

150 INTRODUCTION TO CHILD PSYCHOLOGY

The development of intellectual and social functioning in the child will be discussed. Theoretical approaches to conceptualizing change in the developing child will be emphasized: psychoanalytic, Piagetian, and behavioristic approaches will be contrasted.

Staff

Offered every year

162 PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR

This course offers students a basis for the understanding and application of psychoanalytic (Freudian) concepts. Students are challenged to interpret simple and complex conflicts in behavior. This also requires students to remember definitions and give examples of concepts. The course focuses on the way psychoanalysts reason. The final examination

requires students to analyze a major literary work from a psychoanalytic perspective. Psychology 101 is *not* a prerequisite.

Mr. Bibace

Offered every semester

169 THE PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE

This is an examination of how the emotions of love and hate are manifested in infancy, childhood, adult life, and in social-collective phenomena. The course will deal with related emotions such as envy, greed, jealousy, despair, etc. Prerequisite: permission of instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

170 INTRODUCTION TO SOCIAL PSYCHOLOGY

This is an examination of the relationship between individuals and the groups, communities, organizations and societies to which they belong. Prerequisite: Psychology 101.

Mr. Sampson, Mr. deRivera

Offered every year

172 PSYCHOLOGY OF PERSONALITY

Consideration of various theoretical approaches, including psychoanalytic, behavioristic, and phenomenological-humanistic theories. Other content may include case illustrations and research in such areas as stress, anxiety, unconscious processes, emotion, and motivation.

Mr. Cirillo, Mr. Laird

Offered every semester

193 INTERPRETATION OF DREAMS

This is a course dealing with the exposition, application, and critical evaluation of various systems of dream interpretation. Included will be the systems of Freud, Jung, Stekel, Boss (phenomenological), May (existentialist), Erikson, Gestalt therapists (e.g., Perls), and others. Problems of "validity of interpretation" will be discussed, and the relation of dream interpretation to the interpretation of other "products of the imagination" will be examined. This course is accessible to students, freshmen to seniors. There is a limited enrollment. Prerequisite: permission of instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

194 THE PSYCHOLOGY OF PLAY

The psychological significance of play in the life of the individual will be explored. Special emphasis will include symbolic play, the development of play from childhood to adulthood, and the relation between individual and social play. Comparative analyses will consider the function of play in non-human as well as the human species. Psychology 101 is not a prerequisite for this course. The class is limited to 20 freshmen and sophomores.

Mr. Damon

Offered every other year

195 THE PURSUIT OF INQUIRY

(See course description under ID/ND 195). Students may register in Psychology 195 if their projects are in the field of psychology. Admission by interview with professor.

Mr. Thompson

Offered every year

196 THE PSYCHOLOGY OF AMERICAN SPORT

The course will focus on two kinds of psychological issues: those related to the participant and those related to the spectator. Participant topics

will include the problems of teaching and learning physical skills, with special attention to the relation between our actions and our ideas about our actions; the effects of athletic participation on other physical and mental functioning; and the role of psychological factors in athletic and other performance, including both transient factors such as confidence and "momentum" and relatively enduring factors such as the personality of the performer. Among the topics covered with respect to the spectator are the social and psychological functions of spectator sports for individuals and society and the effects of spectator sports on the audience, with special attention to the effects of athletic violence on audiences. No prerequisites, unlimited. Taught as part of a cluster in the Program of Humanistic Studies with Economics 196 and Geography 196.

Mr. Laird

Offered every other year

200 LABORATORY IN ETHOLOGY

The members of the class will participate in research projects on the behavioral biology of a variety of species, mostly birds. The members will work in small teams each of which is devoted to the study of a single species. Bird species available for study include bluejays, red wing black birds, song sparrows, towhees, robins, barn swallows, orioles, bobolinks, phoebes, crows, cardinals, and others. Non-bird species include wasps, frogs, dairy cattle, etc. The laboratory is conducted at the instructor's farm in New Braintree. Transportation to the farm may be provided at a nominal extra cost. Students must provide their own binoculars and wet weather gear. Enrollment is limited. Admission is by negotiation. Also listed for credit as Biology 219.

Mr. Thompson

Offered by special arrangement

201 LABORATORY IN SOCIAL PSYCHOLOGY

General principles of experimental design are learned through the design and performance of original experiments in experimental social psychology. Both group and individual experiments are conducted in any of the usual topic areas of social psychology. The lab is limited to 20 students. Prerequisites: Psychology 170, 105.

Mr. Laird

Offered every year

202 LABORATORY IN CHILD RESEARCH

This is an introduction to methods used in the study of child thought and behavior. Students will conduct research projects involving observational, experimental, and interviewing techniques. Discussions will consider means of data analysis as well as data collection. Prerequisite: Psychology 105. The lab is limited to 16 students.

Mr. Damon

Offered every year

203 LABORATORY IN HUMAN COGNITION

Experimental studies will be considered in the area of reasoning and language comprehension, learning, and memory. This course is aimed at familiarizing the students with the methods used in cognitive psychology, the range of problems studied, and the theoretical concepts used to interpret experiments. Skills in experimental design, statistical analysis, reading and summarizing scientific journal articles, and scientific writing will be acquired in the context of conducting two or three closely supervised experimental projects and one more independent project. Prerequisite: Psychology 105.

Ms. Joffe Falmagne

Offered every other year

205 LABORATORY IN CHEMICAL SENSES

Students will conduct experiments on the scaling of taste, smell, and flavor. Examples of projects are a comparison of different sugars on sweetness and pleasantness, and determination of the role of odor in flavor perception. Prerequisite: Psychology 105.

Mr. Stevens

Offered every year

206 LABORATORY IN PERSONALITY

The issues and problems in psychological research in general and in the personality area in particular are examined, the problems being exemplified in studies developed and performed by the class group and by individuals. Experiments may be in any of the conventional areas of personality research, such as perceptual defense, motives and performance, self perception, experimenter influence, and emotions. Prerequisites: Psychology 170 or 172, 105, permission of instructor.

Mr. Laird

Offered every year

207 LABORATORY IN PERCEPTION

This course stresses mastery of experimental skills and scientific writing in the context of the investigation of sensory and perceptual phenomena in a variety of sense modalities. Prerequisites: Psychology 105, 140, permission of instructor.

Ms. Wiser

Offered every year

208 LABORATORY IN CHILD PSYCHOLOGY

This is an introduction to research methods employed in the study of child behavior through participation in studies carried out by the class, with particular emphasis on experimental designs currently used in the field. Related theoretical and methodological issues will be discussed with the aim of placing the experimental study of child behavior within the study of development. Prerequisites: Psychology 105, 150.

Ms. Uzgiris

Offered every other year

210 LABORATORY IN PHENOMENOLOGY

This laboratory is designed to acquaint students with the method of "conceptual encounter"—a way of interviewing that is useful in exploring the structure of emotional experience. Prerequisite: Psychology 243 (which may be taken concurrently).

Mr. deRivera

Offered every year

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING

The illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting will be observed. Special consideration will be given to the work of Freud, Piaget, Skinner, Wertheimer, Lewis, and F. Kluckhohn. Students will carry out field observations and formulate and execute their own individual projects. See also Education 211. Prerequisites: Psychology 105, permission of instructor.

Mr. Zern

Offered every year

213 LABORATORY IN INTERPERSONAL RELATIONS

Interviewing in the area of interpersonal relations with emphasis on value possessions, value transmissions, and value losses will be examined. Prerequisite: permission of the instructor on day of registration; corequisite: Psychology 286. The lab is limited to 15 students.

Ms. Dembo

Offered every year

296 Psychology

214 LABORATORY IN REHABILITATION

In this laboratory, stress is placed on interview technique in the study of rehabilitation issues. Prerequisite: permission of instructor on day of registration; corequisite: Psychology 274. The lab is limited to 15 students.

Ms. Dembo

Offered every year

215 RESEARCH IN EMOTION AND MOTIVATION

Students, working in close collaboration with the instructor, will design, conduct, and present a piece of research that investigates an emotional or motivational phenomenon. Prerequisites: Psychology 184 or Psychology 285, and permission of instructor.

Mr. deRivera

Offered every year

216 RESEARCH IN PERSONALITY AND ENVIRONMENTAL DETERMINANTS OF COLLEGE STUDENT ADJUSTMENT

This course reviews the rationale, method, and findings of an ongoing research project at Clark investigating personality and environmental determinants of adjustment in college, with consideration of similar research elsewhere as reported in the professional literature. Relevant issues in personality measurement will be addressed, and each student will develop and carry out an empirical investigation relevant to the course topic. Prerequisites: Psychology 105 and 172 and permission of instructor.

Mr. Baker

Offered every semester

217 RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD

With roots in Piaget's theorizing, a constructivist-interactionist approach to the study of development in infancy and early childhood will be exemplified through the findings and problems from ongoing research projects. Students will each formulate a pertinent study, carry it out, and prepare papers describing their work. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every year

218 RESEARCH IN ANIMAL BEHAVIOR: ETHOLOGY

This course has weekly meetings in which research literature of interest to the group is reviewed, and participants' research projects are designed and evaluated. Prerequisite: permission of instructor.

Mr. Thompson

Offered every year

219 RESEARCH IN BRAIN DAMAGE AND BEHAVIOR

This is a course that usually lasts at least one academic year and is open to anyone who has the high level of motivation and intellectual curiosity necessary to develop and carry out an intensive program of research on the relationship between brain function and behavior. Essentially, the course takes the form of a "tutorial" in which there is a very close working relationship among students, the professor, and the graduate students working in the laboratory. There is active involvement in *all* phases of research, including searching available literature, planning and design of experiments, all surgical and histological procedures, data analyses, and final preparation of the material for presentation (by the students) at scientific meetings or for publication. It must be emphasized that, while solid grasp of experimental techniques is necessary, the development of conceptual and theoretical skills is given

first priority. Enrollment is strictly limited and is by invitation of the instructor. Prerequisites: high academic standing, biological or experimental background desirable but not essential.

Mr. Stein

Offered every semester

220 RESEARCH IN CHEMORECEPTION

Students will design, conduct, and interpret research in taste, smell, and flavor. Prerequisite: permission of instructor.

Mr. Stevens

Offered every year

221 RESEARCH IN SOCIAL PSYCHOLOGY

Students will participate in the design, execution, analysis, and interpretation of research on self-awareness and self-knowledge, including areas of emotions, attitudes, and abilities. Prerequisites: previous courses in social psychology, statistics, and at least one laboratory course, and permission of the instructor.

Mr. Laird

Offered every year

223 RESEARCH IN VERBAL AND NONVERBAL COMMUNICATION

This course reviews some of the issues and methodologies used in investigations of communication, verbal and nonverbal. Each student is helped to formulate a research plan and to carry it out.

Mr. Wiener

Offered every other year

225 RESEARCH IN SYMBOLIZATION

The student interested in a special aspect of symbolic representation is helped to investigate it through a piece of empirical research. Ideally the student carries out all phases of the research, including reviewing literature, designing and conducting a study, and writing a report of the literature. Limited. Prerequisites: Psychology 105, 276 and permission of the instructor.

Mr. Cirillo

Offered every other year

226 RESEARCH IN PERCEPTION

Students will participate in an ongoing research program in collaboration with the instructor in the area of perceptual processing and the components of perceptual development. Prerequisite: permission of the instructor.

Ms. Wiser

Offered every year

227 RESEARCH IN REASONING IN CHILDREN AND ADULTS

Each undergraduate student will conduct a research project in the area of reasoning and logical development in close collaboration with the instructor and possibly a graduate student doing research in that area. The course is designed to provide the student with the relevant substantive background and methodological principles as well as the full experience of conducting one entire piece of research. Introductory sessions will consist of a survey of the area and of the research program in which this course takes place and an outline of several specific research projects, concerning deductive abilities in children and adults; learning of logical rules; logical aspects and other aspects of language comprehension. One of the aims of the course is to help the student develop the ability to formulate research questions as well as the ability to design and execute the corresponding experiments, and to assess

the theoretical relevance of the results. Prerequisites: Psychology 105, permission of the instructor.

Ms. Joffe Falmagne

Offered every other year

228 RESEARCH ON DEVELOPMENTAL ASPECTS OF TRANSACTIONS OF PERSONS-IN-ENVIRONMENTS

Theory, findings, and research problems deriving from an ongoing research program—an organismic-developmental systems approach to the analysis of transactions of persons-in-environments—will be discussed. Empirical studies on problems relevant to the research program will be formulated and conducted by individual students. Papers describing the research project will be prepared. Prerequisites: Psychology 105, permission of instructor.

Mr. Wapner

Offered every semester

230 BRAIN FUNCTION AND BEHAVIOR

This is a survey course of current problems of physiological psychology including theories of brain function. Emphasis will be placed on the underlying physiological mechanisms that mediate behavior, i.e., motivation, emotion, learning, perception, and memory. The course is constructed on a systems approach, designed to demonstrate the complex and interdependent relationship of the body and brain to behavior.

Mr. Stein

Offered every year

231 COGNITIVE DEVELOPMENT

The course critically surveys empirical findings and selected theoretical viewpoints (Piaget's among others) in the areas of logical development, language development, conceptual development, and perceptual and memory development. The relations between cognitive development and, respectively, language and culture, are examined and discussed in connection with the theories surveyed. Active participation from students is encouraged. Prerequisite: permission of instructor.

Ms. Joffe Falmagne, Staff

Offered every other year

232 HUMAN COGNITION

The course critically surveys current theoretical viewpoints, empirical findings, and selected theoretical issues in the areas of language, concepts and categorization, memory, reasoning, mental imagery, and knowledge representation. Though not a seminar, student participation will be required some of the time through structured discussions of readings and short class presentations. Prerequisite: Psychology 105.

Ms. Joffe Falmagne

Offered every other year

235 PSYCHOTHERAPIES

A variety of methods of curing symptoms, solving problems in living, and promoting personal development will be considered through class discussion and illustration and through intensive reading of primary sources. Credit depends on written papers as well as class participation. Prerequisites: Psychology 172, permission of the instructor.

Mr. Cirillo

Offered every year

240 DEVELOPMENTAL APPROACHES TO BEHAVIOR

This is a critical examination of presuppositions, methods, concepts, and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization

for all of the life sciences will be discussed. Psychological theories of Freud, Piaget, and Werner will be given special emphasis. Prerequisite: permission of instructor.

Mr. Kaplan

Offered every other year

236 PROBLEMS OF NUCLEAR WAR

The problems posed by the nuclear arms race can be solved only with the help of many different disciplines, and we shall be aided by faculty from economics, government, history, military science, physics, and sociology. However, we will attempt to unify these different perspectives by developing the basic concepts of social psychology. We shall use our new knowledge to devise a plan of action to end the nuclear arms race, a plan which we will test and reevaluate by engaging in concrete action.

Mr. deRivera

Offered every year

242 PSYCHOLOGY OF LANGUAGE

A social-psychological and anthropological analysis of the various functions of language will deal with language in everyday life, poetry, dreams, social movements, etc. Also considered will be various philosophical views of language and the relations between language and thought. Prerequisite: permission of instructor. There is a limited enrollment. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

243 SEMINAR IN PHENOMENOLOGICAL PSYCHOLOGY

This is a course which describes and analyzes personal experience. Each of the readings describes a different aspect of experience. We then compare these descriptions with our own experience of our body, our environment, our self, others, our emotions, actions, and thoughts, and with our imagination and our relationship to reality. Students who want to take a close look at their emotional experience are encouraged to concurrently enroll in Psychology 210—Laboratory in Phenomenological Psychology. Prerequisite: Psychology 101.

Mr. deRivera

Offered every year

244 SEMINAR IN MOTIVATION

The concept of motivation will be examined. Several theoretical models will be discussed, including those of psychoanalytic, ethological, and learning theories. Each member of the class will make an oral presentation and submit a paper.

Mr. Stevens

Offered every year

245 DEVELOPMENT IN INFANCY

Current research on human infants will be examined, with emphasis on relations between functioning during this period and later in ontogenesis. A view of the child as an organized adaptive system will be emphasized. Topics to be considered include learning, intellectual functioning, social relationships with others, and the beginnings of language. Some consideration will be given to deviations from normal development. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every other year

247 SOCIAL DEVELOPMENT FROM INFANCY THROUGH ADOLESCENCE

This is an examination of theories and research dealing with the process of socialization in the first two decades of life. Topics to be emphasized

include: attachment, role taking, the development of social and sexual identity, and moral development.

Mr. Damon

Offered every year

248 CONCEPTS IN THEORIES OF PERSONALITY—NORMAL AND ABNORMAL

This course is a consideration and critical analysis of: (1) concepts and issues in theories of personality, and (2) concepts used to account for deviant behavior.

Mr. Wiener

Offered every year

249 WOMEN IN SOCIETY

The course includes three related parts: 1) *the context*, including a cross-cultural, anthropological examination of women's cultural status in society, of economic and historical factors in that regard, of the environmental factors impinging on the individual (language, media, literature, cultural institutions—e.g., law), and of the role of biological factors in psychological functioning; 2) *individual functioning*, covering such topics as personality development, life issues of women, achievement, motivation, intellectual functioning, power, etc.; 3) *women's roles and functions in society*, including mothering, work, professional careers, homemaking, politics, as well as issues relating to role choices and adult development. Discussions of interactions between cultural-social, psychological, and biological factors are emphasized, and extensive bibliographical references are provided for further use.

Ms. Joffe Falmagne

Offered every year

250 COMMUNICATION: VERBAL AND NONVERBAL

This course deals with: (1) an analysis of the term communication and (2) a study of the varieties of communication patterns for different populations.

Mr. Wiener

Offered every year

254 INTERPRETATION OF BEHAVIORS TRADITIONALLY SUBSUMED BY "ABNORMAL PSYCHOLOGY"

The course will deal with the interpretation of some behaviors usually subsumed by "Abnormal Psychology." Behaviors such as schizophrenia, depression, hysteria, obsession, and antisocial personality will be examined. The goal is to articulate multiple theoretical and relational perspectives regarding what is referred to as "abnormal," assumptions regarding how "abnormality" comes about, methods of treatment and the assumptions which lie behind them. Students participate in the clinician's "world of action." Students observe, describe, interpret, and prescribe courses of action for sample "cases," which fall within various "abnormal categories." Prerequisite: Psychology 172, permission of instructor.

Mr. Bibace

Offered every semester

257 HISTORY OF PSYCHOLOGY I

The historical development of views concerning the nature of mind and its place in nature: from the beginnings to the rise of modern science. Limited.

Mr. Kaplan

Offered every other year

258 HISTORY OF PSYCHOLOGY II

The historical development of views concerning the nature of mind and its place in nature: from the rise of modern science to the present day. Limited. Prerequisite: Psychology 257.

Mr. Kaplan

Offered every other year

261 HUMAN NEUROPSYCHOLOGY PROSEMINAR, PARTS I AND II

Approximately ten prominent lecturers will review and discuss current research. Topics include: overview of brain organization; brain electrical potentials; cerebral dominance; neuroanatomy and pathology of language; bilingualism; emotion; psychosurgery. Year-long course; divisible. Open to advanced undergraduates and graduate students.

Ms. Oscar-Berman, Ms. Kaplan

Offered every year

262 NEUROPSYCHOLOGY OF PERCEPTION AND MEMORY

Models of normal information processing and their application to neurologically impaired perceptual and mnemonic processes will be reviewed. An attempt will be made to show how different neurological disorders represent failures at distinctive stages of information processing. Clinical materials related to visual object agnosia, constructional apraxia, and various amnesic states will be presented and discussed in detail. Emphasis will be placed upon a critical examination of the theoretical and experimental investigations of Luria, Teuber, Talland, and Milner. Open to advanced undergraduate and graduate students.

Ms. Oscar-Berman,

Mr. Butters, Mr. Cermak

Offered every other year

264 HISTORY AND EVOLUTION OF IDEAS IN BRAIN FUNCTION AND BEHAVIOR

This seminar course will discuss the evolution of the concepts of brain function and structure beginning with ancient Greek and Middle Eastern notions of the mind-body problem and ending with current concepts and models based on mathematical and holographic metaphors. The issue of localization of function in the brain and the evolution of thinking about this problem will serve as the underlying theme for organizing the topic. Other related issues such as: reductionism, emergence, psychophysical parallelism, and determinism also will be discussed and evaluated. Open to advanced undergraduates and graduate students. Prerequisites: at least one course in undergraduate physiological psychology or its equivalent, permission of instructor. All students will be expected to present a seminar and lead a critical and evaluative discussion of the materials they present. A major critical and evaluative paper on the topic of the student's choice must be submitted by the end of the semester to obtain credit for this course.

Mr. Stein

Offered every other year

265 NEUROPSYCHOLOGY OF LANGUAGE

Aphasia, alexia, and associated disorders of language resulting from focal brain damage are reviewed in relation to current conceptions of normal language function. Open to advanced undergraduate and graduate students.

Mr. Howes, Ms. Menn

Offered every other year

266 CEREBRAL DOMINANCE SEMINAR

The clinical basis for present views of cerebral dominance will be reviewed in relation to developmental and genetic evidence. Experimental

studies with normal and pathological populations will be reviewed with respect to their bearing on theories of brain laterality. Open to advanced undergraduate and graduate students.

Mr. Goodglass, Staff

Offered every other year

267 SEMINAR IN BEHAVIOR AND EVOLUTION

This is a consideration of selected contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular. Also listed for credit as Biology 334.

Mr. Thompson

Offered every year

268 PHEROMONES

Pheromones are odors which determine a variety of social behaviors. Examples are territorial, aggressive, and sexual responses. This course will critically examine *pheromone* as a scientific concept and then review evidence for pheromones (or "chemical communication") in mammals, including the controversial area of human sexual pheromones.

Mr. Stevens

Offered every other year

270 SEMINAR—ADVANCED TOPICS IN SOCIAL PSYCHOLOGY

This is an intensive treatment of selected areas in social psychological research and theory, including consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; social/situational determinants of normal, everyday behavior and of antisocial behaviors such as violence, criminality, and riots. Ordinarily limited to senior majors in psychology or sociology. Prerequisite: permission of instructor.

Mr. Laird

Offered every other year

274 SEMINAR IN REHABILITATION

Psychological problems in everyday life situations, such as problems of the physically disabled, mentally retarded, the aged, the poor, etc. will serve as topics. The primary focus is on interpersonal relations and their importance for environmental changes. The seminar is limited to 15 students. Prerequisite: permission of instructor on day of registration; corequisite: Psychology 214.

Ms. Dembo

Offered every year

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM AND SYMBOL

A close examination of the processes of symbol formation in everyday figurative and metaphorical language, in dreams, in myths, and in other productions of the imagination. Both cultural and individual manifestations of symbol formation will be examined, and various frameworks for interpretation of symbols will be critically discussed. Problems of validity of interpretation will also be explored. Prerequisite: permission of the instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

277 THE CREATIVE PROCESS

A critical examination of a number of attempts, in the humanities and human sciences, to describe and/or explain manifestations of creativity in the arts, sciences, and other domains. Major focus will be on the factors presumably constituting the creative act or inherent in creative functioning. Subsidiary attention will be paid to conditions in the cos-

mos, society, or the 'personality structure' putatively facilitating or inhibiting creative functioning. Among the theorists considered will be such philosophers as Aristotle, Kant, Hegel; such belles-lettrists as Coleridge, K. Burke, A. Koestler; psychoanalysts of various persuasions and degrees of clarity, Freud, Kris, Rycroft, Jung, Neumann, Arieti, et al; psychologists from various schools, phenomenological, Gestalt, behavioristic. One requirement for the course is a final paper, in which each participant articulates his/her conception of the creative process and its conditions and rigorously defends his/her formulation. Limited to 20 students. Permission of the instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

278 COGNITIVE DEVELOPMENT FROM INFANCY TO ADOLESCENCE

This seminar will focus on an examination of selected research studies and theoretical accounts of concept development, memory, and reasoning, with special emphasis on Piagetian and Soviet perspectives. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every other year

279 DEVELOPMENT OF CONSCIOUSNESS

A seminar designed to examine critically various esoteric views concerning the development of consciousness (mind) and stages of consciousness, and to compare and contrast these views with those prevailing in current academic psychology under the rubrics of *cognitive development* and *personality development*. Among the views considered will be those deriving from Eastern thought (Vedas, Yoga, Buddhism), Near Eastern thought (Sufiism, Gurdjieff-Ouspensky, Arica) and Western religious and philosophical thought. Among the currently considered views with which these will be compared and contrasted are those of Freud, Jung, Piaget, and Werner in psychology, and Cassirer in philosophy. Prerequisite: permission of the instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

280 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY AND THEORY OF INTERPRETATION, PART I

A close, critical examination, in the light of current views on the nature of interpretation and the nature of signs and symbols, of various conceptions of human development advanced by a variety of thinkers. Although there will be a special emphasis on "depth developmental psychologies" (e.g., Freud, Jung, and their disciples and followers), consideration also will be given to the developmental perspectives of Piaget, Werner, and Vygotsky. The focus will be on the extent to which conceptions of development, descriptions of development, and "explanations" of development are rooted in tacit commitments of the various theorists to unexamined dogmas as to the nature of reality, the place of mind in nature, the order of values, and the bases for interpretation of signs and symbols. Among the hermeneuticists and semioticians whose work will be examined are Cassirer, Gadamer, Ricoeur, Burke, and Culler. Two-semester course. Prerequisite: permission of the instructor.

Mr. Kaplan

Offered every other year

281 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY AND THEORY OF INTERPRETATION, PART II

Continuation of Psychology 280. Prerequisite: Psychology 280.

Mr. Kaplan

Offered every other year

282 PRINCIPLES AND CONCEPTS UNDERLYING PSYCHOLOGICAL TESTING

Staff

Offered every other year

285 EMOTION AND INTERPERSONAL RELATIONSHIPS

What are emotions and how do they affect our behavior and our relationships? We will examine a number of theories about different emotions and apply these theories to our personal experience with different emotions and with our relations with others. Prerequisite: permission of the instructor.

Mr. deRivera

Offered every year

286 SEMINAR IN INTERPERSONAL RELATIONS

Value problems pertaining to interpersonal relations will be discussed, including value possessions, value losses, regaining of values, and adjustment to value losses. The pertinence of these topics in rehabilitation will receive special consideration. The seminar is limited to 15 students. Prerequisite: permission of instructor on day of registration; corequisite: Psychology 213.

Ms. Dembo

Offered every year

287 SELECTED PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY

This is an advanced tutorial course in research methodology including surgical and stereotaxic techniques, histology, EEG recording and analysis, and general methods for animal care. Prerequisite: permission of instructor. Offered on an "as-needed" basis.

Mr. Stein

288 LOGICAL REASONING IN ADULTS AND CHILDREN

The course will cover in depth the current empirical findings and theoretical developments in the areas of propositional reasoning, syllogistic reasoning, and transitive inference in children and adults. Issues related to the notions of mode of representation and of logical competence will be given particular attention, and connections with the adjacent area of psycholinguistics will be discussed. The research and models concerning reasoning in children and reasoning in adults, respectively, will be presented from a common perspective, and the contrasts and connections with the Piagetian perspective will be indicated. The course will be conducted as a workshop, in which the sequence of readings and topics will ensure a systematic progression through the material, and each student will have primary responsibility for the formal presentation of part of the material on one session. A supplementary reading list will be provided at the end of the course; the aim of the course is to enable students to continue reading on their own in the areas after this introductory background. Prerequisite: permission of the instructor. Limited to 10 students.

Ms. Joffe Falmagne

Offered every other year

289 PSYCHOLOGY FROM THE VIEWPOINT OF AN ORGANISMIC-DEVELOPMENTALIST

This is a systematic, integrated overview of the field of psychology. Using organismic-developmental theory as an integrating framework,

paradigmatic problems and methods in psychology will be surveyed with a major focus on the interrelationship of assumptions, hypotheses, and empirical findings in each area. A variety of phenomena of central interest to psychologists will be treated utilizing such concepts as levels of organization, person-environment systems, structure-function relationships. The course will be conducted in seminar fashion, and students will be expected to participate actively by analyzing relevant empirical work, giving presentations, etc. Prerequisite: permission of instructor.

Mr. Wapner

Offered every other year

291 THE PURSUIT OF PSYCHOLOGICAL INQUIRY

This course is designed for students who want to do independent work on a psychological project and have been unable to find a faculty sponsor for that work. By providing a peer group context, the course supports and assists students in writing a term paper that reflects what they have learned from their experience in library research or from a field experience in the Worcester community. Class meetings will be used to clarify goals, develop arguments, and try out ideas and pieces of writing. Permission of instructor required.

Mr. Thompson

Offered every year

296 DIRECTED RESEARCH IN PSYCHOLOGY

This is an independent study for qualified students not in the honors program. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

297 DIRECTED READINGS IN PSYCHOLOGY

This is independent study for qualified students not in the honors program. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

298 SUPERVISED PRACTICUM AND DIRECTED READINGS IN USE OF PSYCHOLOGICAL KNOWLEDGE AND METHODS IN PRACTICAL SETTINGS

Supervised practical experience in a work-setting relevant to a topic selected by the student from the subject matter of a psychology course taken previously, with associated bibliographical research. Must be sponsored by a member of the Clark psychology faculty who will evaluate the academic component of the student's work, typically through a term paper on the selected topic integrating information from the professional literature with observations made in the practicum. A maximum of one practicum course credit can be applied to the requirements for the major and may substitute in the psychology major for one of the two required upper level seminars (in the 240-289 range) unless one of the courses offered in satisfaction of that requirement is Psychology 251 (Current Concepts in Mental Health). Enrollment must be approved by the course coordinator.

Mr. Baker, Staff

Offered every semester

299 HONORS IN PSYCHOLOGY: SENIOR YEAR

Students will carry out a research project under the direction of a member of the staff.

Staff

Offered every semester

300 PROSEMINAR—DEVELOPMENTAL PSYCHOLOGY

A seminar devoted to the presentation and critique of different developmental approaches to the individual and his/her ways of functioning in the world. Among the approaches considered are: (1) Piagetian, (2) organismic-developmental, (3) Soviet approaches to psychology, and (4) Freudian and neo-Freudian. The aim of the seminar is to acquaint the participants with sympathetic expositions of diverse points of view and the application of these viewpoints to empirical inquiry. It will thus provide a basis for subsequent discussions in other seminars of the various ways of dealing with substantive issues (e.g., learning, moral action and moral judgment, language, the processes of thinking). Several faculty members and advanced graduate students will participate in conducting the seminar.

Staff

Offered every other year

301 PROBLEM, THEORY, AND METHOD IN PSYCHOLOGY

During the first half of Semester 1, students will discuss the perspectives and research of faculty members with an emphasis on the special features of methodology they employ, including the links between method, theory, problems, and findings. During the second half of Semester 1, and Semester 2, there will be informal, ad hoc, individual or group meetings in which students will present proposals for their M.A. theses. At the end of the second semester, students will submit written reports which cover the status of their research.

Mr. Wapner

Offered every semester

302 STATISTICAL METHODS

During Semester 1, the theoretical foundations of inferential statistics are discussed. Topics include probability, sampling distributions, and hypotheses testing. The second semester is concerned with complex analysis of variance designs and regression. Also, students learn to use the statistical package on the University computer.

Ms. Wiser

Offered every semester

303 PROSEMINAR IN EXPERIMENTAL PSYCHOLOGY

This is an introduction to psychophysics, sensory processes, theories of perception, theories of learning, memory, language, information processing, higher mental processes, including the biological bases thereof. This seminar is designed to give students basic concepts in classical and contemporary psychology and to survey the theories, major findings and contemporary issues in those areas. Several faculty members will conduct the class, each being responsible for the section of the course in her/his area of specialization.

Staff

Offered every semester

304 FORMAL MODELS FOR PSYCHOLOGY

This is an introduction to formal methods and models applicable to psychological theorizing. The aim of the course is to familiarize students with methods and formal ways of thinking of wide applicability across content areas, to indicate how various theoretical or empirical questions can be formalized in those terms, and to equip students with the sources and further readings that will enable them to pursue those topics further on their own. The topics covered will include sets and relations, groups, lattices, fuzzy sets, formal grammars and automata, Markov chains, learnability theory, logic, and modal logic. Illustrative applications of

those methods to various content areas will be presented and worked out.

Ms. Joffe Falmagne

Offered every other year

311(a) CLINICAL METHODS, I

This is an introduction to psychometric and projective assessment.

Ms. Kellett

Offered every year

311(b) CLINICAL METHODS, I

This is a clinical interpretation of representational behavior in projective tests and interviews from a cognitive and developmental viewpoint. Offered as a half course, first half of second semester.

Mr. Cirillo

Offered every year

312 PSYCHOPATHOLOGY

This is an introduction to psychopathology—directly, through naturalistic observation and interviews with seriously disturbed individuals, and indirectly, through clinical and experimental reports related to description and explanation of psychopathology. A paper on some specific psychopathological phenomenon (e.g., delusions, hallucinations) will be required.

Mr. Bibace

Offered every other year

313 CURRENT TOPICS IN COGNITIVE SCIENCE

Selected topics in the foundations of cognitivism.

Ms. Joffe Falmagne

Offered every other year

315 IMITATION, INTERNALIZATION, IDENTIFICATION

This seminar is concerned with processes involved in self-other differentiation and the influence of significant others in the construction of the self. The writings of J. M. Baldwin, J. Piaget, G. H. Mead, A. Bandura, R. Schafer, M. Mahler, and J. Macmurray pertaining to these processes are discussed and relevant research evidence is considered.

Ms. Uzgis

Offered every other year

317 BEHAVIOR IN INFANCY

The seminar will proceed from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the infant's organization of its functioning in the world.

Ms. Uzgis

Offered every other year

319 SEMINAR ON GENETIC-STRUCTURAL APPROACH TO MENTALITY

A seminar devoted to demonstrating how genetic structural approaches, viz., those of Marx, Freud, Jung, Cassirer, Werner, Piaget, and others, deal with the analysis of mentality as revealed in collective and individual activity. Special emphasis on the categories basic to all genetic structural approaches.

Mr. Kaplan

Offered every other year

320 ADVANCED SEMINAR IN GENETIC-STRUCTURAL APPROACH TO MENTALITY

A seminar devoted to the examination of developmental approaches to human life which focus on "liberation," "freedom," "individuation,"

etc. as the telos (goal) of development. Included here will be the thought of philosophers and sociologists as well as psychologists. Different genetic-structural theorists will be considered from year to year.

Mr. Kaplan

Offered every other year

324 THEORIES OF PERSONALITY I: ISSUES IN THE PHILOSOPHY OF PSYCHOLOGY

This course covers three areas: (1) discussion of the philosophical bases of "theories" of personality, (2) consideration of some of these issues in different theories (e.g., Freud), and (3) presentation and discussion of an alternative framework.

Mr. Wiener

Offered every other year

327 MORAL DEVELOPMENT

The classical and contemporary approaches to the development of moral judgment and conduct in the individual will be studied. Emphasis will be on new and future directions for research in this area.

Mr. Damon

Offered every other year

328 SOCIAL COGNITION

This course will focus on contemporary approaches to the study of social reasoning in children, adolescents, and adults. Emphasis will be on the individual's developing knowledge of interpersonal relations, the self, and other persons. Recent theoretical and empirical work will be considered.

Mr. Damon

Offered every other year

329 SEMINAR IN GENERAL PSYCHOLOGY FROM THE ORGANISMIC-DEVELOPMENTAL PERSPECTIVE

In-depth exploration of general psychology in the context of a teaching practicum. To be taken concurrently with assisting in Psychology 101, General Psychology. Optional for students assisting in Psychology 101.

Mr. Wapner

Offered every semester

331 CLINICAL METHODS, II

A practicum devoted to clinical experiences primarily with children. This includes intelligence and projective testing, diagnostic interviewing, and play therapy with children.

Mr. Ciotton

Offered every year

332 THEORIES OF PSYCHOTHERAPY

A comparison of various theoretical approaches to psychotherapy will be considered.

Mr. Wiener

Offered every other year

335 SOCIAL EVOLUTION

This course is an ongoing colloquy on the evolutionary perspective which is designed for graduate students in psychology, biology, and geography. Each year the participants in the seminar agree on a conceptual problem they want to explore during the sessions of the seminar. In recent years, sample problems have included the possible significances of sociobiology to contemporary psychology, neo-Lamarckian approaches to evolutionary theory, the concept of levels of analysis, and the significance of song in the social life of birds. The seminar is offered in the spring, but interested graduate students should contact

the instructor during the previous fall so that topics can be decided and reading materials can be made available.

Mr. Thompson

Offered every year

337 LOGICAL COGNITION

Philosophical work on the foundations of logic, and psychological, theoretical, and empirical work on logical reasoning and logical development will be discussed. An introduction to some formal systems of logic will be provided. Issues related to mental representation, development, and the relations between linguistic and nonlinguistic cognition, will be given particular attention.

Ms. Joffe Falmagne

Offered every other year

338 SELF-CONCEPT AND SELF-PERCEPTION

An examination of research and theory on attributions to self and others and their relationship to action.

Mr. Laird

Offered every other year

339 SEMINAR ON THE EFFECTS OF EARLY EXPERIENCE

This is an examination of recent evidence pertaining to the effects of various circumstances during early ontogenesis in the course of perceptual, cognitive, and motivation development; aimed at conceptualizing these effects within a coherent framework.

Ms. Uzgiris

Offered every other year

340 PHENOMENOLOGY OF INTERPERSONAL RELATIONS

This course uses our knowledge of various emotional transformations (e.g., changes in self-boundary) to develop a precise language for the description of interpersonal phenomena such as merger-separation, dynamics, identification, and the dynamics of family constellations.

Mr. deRivera

Offered every other year

343 SEMINAR IN CHEMORECEPTION

Selected current topics in taste and smell will be examined.

Mr. Stevens

Offered every year

351 CLINICAL METHODS, III

Practicum training in some special area, e.g., child clinical, family interactions, human neuropsychology.

Staff

Offered every semester

352 CLINICAL METHODS, IV

Practicum training in diagnostic interviewing in the Psychological Services Center.

Mr. Baker, Mr. Cirillo

Offered every semester

353 THEORY AND PRACTICUM IN BEHAVIOR MODIFICATION

Mr. Peterson

Offered every year

357 SYMBOLIC BEHAVIOR

The seminar's first semester will deal with "primitive" forms of cognition and expression (representation, symbolization) as these are manifested in ontogenesis (language behavior, play, etc.) in the collective representations of nonliterature societies (as discussed by Levy-Bruhl, Levi-Strauss, and others), in oneiric states (dreams, hypnagogic con-

ditions), in poetry, and in organic- and psychopathology. During the second semester the seminar will be oriented toward research in the area of "primitive" thinking and expression. Only those registered during the first semester will be permitted to enroll during the second semester.

Mr. Kaplan Offered every other year

366 MIND AND COGNITION

The underlying general question in this seminar concerns the organization of mind and the development of knowledge. Topics will include logic and mind, language and mind, learnability, innateness, induction, and culture and mind. Psychological and philosophical material will be discussed.

Ms. Joffe Falmagne Offered every other year

380 RESEARCH IN PSYCHOLOGY

Direction of individual students in their research.

Staff Offered every semester

381 READINGS IN PSYCHOLOGY

This is a critical analysis of literature in areas related to individual research.

Staff Offered every semester

382 CONSULTATION IN FAMILY PRACTICE

Practicum in consultation to residents in family medicine.

Mr. Bibace, Mr. Catlin, Ms. Cotsonas

383 WORKSHOP ON PROBLEMS AND ISSUES IN CLINICAL PSYCHOLOGY

Clinical Staff Offered every semester

385 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, I

Mr. Baker Offered every semester

386 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, II

Mr. Baker, Mr. Bibace,
Mr. Cirillo, Mr. Wiener, Mr. Peterson Offered every semester

387 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, III

Mr. Baker, Mr. Bibace,
Mr. Cirillo, Mr. Wiener, Mr. Peterson Offered every semester

388 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, IV

Mr. Baker, Mr. Bibace,
Mr. Cirillo, Mr. Wiener, Mr. Peterson Offered every semester

389 INTERNSHIP IN PSYCHOLOGY

Staff Offered every semester

Russian

See Department of Foreign Languages and Literatures.

Science, Technology and Society

PROGRAM FACULTY

Christoph Hohenemser, Ph.D., Professor of Physics, Program Chair
Dennis W. Ducsik, Ph.D., Assistant Professor of Science, Technology

and Society, Associate Chair and Undergraduate Adviser

Roger E. Kasperson, Ph.D., Professor of Government and Geography

Robert W. Kates, Ph.D., Professor of Geography and Research Professor
in the Center for Technology, Environment, and Development
(CENTED)

John T. Reynolds, Ph.D., Professor of Microbiology

Harry E. Schwarz, B.C.E., Professor of Environmental Affairs

John A. Davies, Ph.D., Associate Professor of Physics

Robert L. Goble, Ph.D., Research Associate Professor in Physics and
the Center for Technology, Environment, and Development (CENTED)

Alan A. Jones, Ph.D., Associate Professor of Chemistry

Peter C. Magnante, Ph.D., Research Associate Professor of Physics

Frank W. Puffer, Ph.D., Associate Professor of Economics

Don M. Shakow, Ph.D., Associate Professor of Economics

Sharon E. Nicholson, Ph.D., Assistant Professor of Georgraphy

UNDERGRADUATE PROGRAM

STS is a program of interdisciplinary study with emphasis on the assessment of policy questions involving the use and misuse of science and technology. The goal of the program is to produce individuals who are able to deal with technical issues in a social and political context, and who do so with an acute awareness of the short and long range limitations of the natural environment. Participating faculty have interests and research activities in a wide range of current societal problems, and regular courses of instruction are offered in three principal areas: (1) energy technology and policy, (2) environmental science and management, (3) assessment and control of technological hazards.

A major in STS would be of interest to any student with a facility in science and a desire to contribute to the solution of complex problems where technology and society come together. The program also is attractive to students who wish to add an interdisciplinary component to their studies within a traditional field; majors from other departments often constitute the majority of students enrolled in program courses. Science majors in particular find STS courses a useful way of adding breadth to their departmental programs.

Graduates of the program have begun to pursue varied and interesting careers in a diversity of fields. Several former STS students, for example, are doing graduate work in areas such as environmental engineering, technology and human affairs, medicine, and law. Others have secured positions with private and public organizations in the energy field. Future graduates might become government regulatory officials, science writers and teachers, environmental lawyers, or community service workers. Many possibilities exist for the person with a broad-based education and some familiarity with the interdisciplinary problems dealt with in the STS field.

The STS degree requirements are designed to ensure that students

acquire a firm grounding in science coupled with considerable exposure to social science/public policy perspectives. Achieving literacy in natural science is considered especially important, for two reasons: (1) many significant problems are accessible only with a thorough grounding in natural science; (2) in the nation's future there is a significant need for managers of science and technology, whose technical background is more than perfunctory. Recognizing this, majors in the program often take more than the minimum number of required science courses.

The requirements for the major in Science, Technology and Society are as follows—

- (1) Six courses in a single natural science discipline, considered for present purposes to include physics, chemistry, biology, or mathematics/computer science. At least five of these must be *basic* courses, which excludes project work and many applied offerings crosslisted between science departments and STS.
- (2) Two additional semesters of unspecified natural science, and two semesters of mathematics (of which at least one must be calculus). Those who are not double majors are encouraged (though not required) to select their other science courses outside the area of concentration chosen for (1) above.
- (3) Four semesters of social science, carefully selected for relevance to the problem areas of greatest interest to the student, of which at least two should be basic as opposed to applied. These are frequently drawn from the fields of economics, geography, government, management, and law.
- (4) Three semesters of problem-oriented courses offered by the Program, including one semester of STS 101 (Introductory Case Studies). Excluded from meeting this requirement are those cross-listed courses which are taught primarily from the perspective of a single discipline (whether science or social science).
- (5) One semester of capstone research, either in the annual seminar available to seniors for this purpose (STS 274) or through an honors thesis, internship, or other special project.

STS majors with a special interest in the environment, moreover, can complete an "environmental affairs option" by taking EA 201/202, EA 203/204, and three other 200-level courses offered under the auspices of the Environmental Affairs Program. Among these courses only one may be used for credit toward the STS degree requirements stated above.

The choice of specific courses to meet these requirements must be approved by the Program Committee, after discussion with individual members, including those who are affiliated with departments in which the students have their science concentration. Students should present a tentative plan of study to the undergraduate adviser at the earliest possible date and are encouraged to meet with him at the beginning of each semester thereafter.

Honors in Science, Technology and Society are awarded upon presentation and oral defense of an undergraduate thesis. Students who wish to receive honors must have attained at least a 3.0 grade point average in STS-required courses by their junior year, and are encouraged to begin work the following summer on a project or internship that can be extended into a thesis during the senior year.

Students wishing to examine sample programs or obtain more detailed information about STS should request a *Guide for Prospective Majors* from the undergraduate adviser.

INTERNSHIPS AND RESEARCH OPPORTUNITIES

Majors in the STS Program are encouraged to strengthen their educational experience further by working in academic year internships and/or paid summer jobs related to their goals and interests. These positions are often obtained with the advice and assistance of the Program Committee, whose members have contact with numerous organizations. Examples of placements in recent years include the Town of Holden Conservation Commission, the Massachusetts Energy Office, the Scientists' Institute for Public Information, the Central Massachusetts Regional Environmental Council, the Massport Office of Noise Control, the Central Massachusetts Air Pollution Control District, and the Massachusetts Office of Coastal Zone Management.

Another important way for undergraduates to supplement their formal classroom training is to participate in "on-campus internships," special projects that involve highly practical work but are carried out in close association with courses tailored to provide the conceptual underpinnings for such work. The two largest and most successful projects of this kind to date have been: (1) the Energy Self-Study, in which students have assisted in the evaluation of numerous energy conservation measures on campus including, particularly, the cogeneration of electricity and steam heat (for which Clark has become a national demonstration site); and (2) the Energy Phone, a student-staffed information and referral service for Massachusetts residents with questions about saving energy in the home.

A third non-traditional activity the STS Program seeks to facilitate is the involvement of undergraduates in faculty research. Much of this is housed in the University's Center for Technology, Environment, and Development (CENTED), where Committee members are currently studying the management of technological hazards, monitoring energy conservation activity in the residential and transportation sectors, and experimenting with methods of producing alcohol fuels. Undergraduate contributions to such work are often printed in the in-house *STS Review* (now in its third volume), and occasionally warrant inclusion in published articles as well. In one case, for example, two former "research apprentices" are now co-authors with their faculty supervisor of a book analyzing certain aspects of the Seabrook nuclear power plant decision.

GENERAL COURSES

101 INTRODUCTORY CASE STUDIES

This course introduces students to the fields of technology assessment and environmental affairs by presenting a series of problem-oriented, interdisciplinary cases. Announced at the beginning of each semester, these cases are drawn from such areas as population and food, land and water resources management, energy, pollution control, and technological risk assessment. An integrative research paper, prepared in close consultation with an instructor, plays a major role in the course, and guest speakers, field trips, and special class exercises are also used to enhance the learning experience. Crosslisted with Environmental Affairs.

Mr. Ducsik, Mr. Hohenemser, Staff

Offered every semester

270 SPECIAL TOPICS IN SCIENCE, TECHNOLOGY AND SOCIETY

Students will do independent readings and/or experimental work. Offered for variable credit.

Staff

Offered every semester

271 HONORS IN SCIENCE, TECHNOLOGY AND SOCIETY

Students will do supervised research leading to an undergraduate thesis. Offered every semester for variable credit.

Staff

Offered every year

274 CAPSTONE RESEARCH SEMINAR

Designed primarily for seniors, this provides an opportunity to integrate various strands of the STS major through intensive work in a small group/tutorial context. Specific topics for investigation will be chosen, largely on the basis of student interest, from a broad array which includes (among other things) global environmental threats, energy and other resource issues, arms control and disarmament, and technological risk assessment. Unlike a regular course, student presentations will constitute a major portion of class meetings, with the instructor acting as a facilitator of discussion and general resource person for the group. A goal of the seminar is to produce an edited volume of student research reports each year, and it is hoped that one or two of these papers will be of publishable quality.

Mr. Hohenemser, Staff

Offered every year

ENERGY-RELATED COURSES

130 ENERGY SOURCES AND SYSTEMS

An introduction to the subject of energy for STS majors and others interested in the utilization of fossil fuels, solar and wind power, geothermal energy, and nuclear fission and fusion. Emphasis is placed on basic concepts, thermodynamic principles, efficiency of use, and methods of converting both energy and energy resources from one form to another. The course provides the necessary background for those planning more detailed study of energy technology and/or policy, and also satisfies the prerequisite for STS 132, Alternative Energy Systems Laboratory. Crosslisted with Physics Department.

Mr. Davies

Offered every other year

131 SOLAR ENERGY

This is a critical survey of existing and proposed methods of utilizing solar energy. Topics include a history of solar energy applications, the use of solar energy for space and water heating, the limitations imposed by thermodynamic laws and economic costs, and an analysis of methods of producing work from solar energy (e.g., solar heat engines, wind, solar cells, ocean thermal gradients, biological methods, etc.). No particular background in physical science beyond high school physics or chemistry is needed. Students will be asked to analyze and evaluate simple systems quantitatively and will become familiar with experimental solar devices now at Clark. Crosslisted with Physics Department.

Mr. Davies

Offered every other year

132 ALTERNATIVE ENERGY SYSTEMS LABORATORY

This lecture and laboratory course is designed to complement and augment STS 131. The subject matter is approached by first developing the concepts of temperature, heat, and energy and then applying these ideas to alternative energy devices. Laboratory experiments include measurement of the performance of solar collectors, photovoltaic cells, and wind machines. Corequisite: Physics 11 or 12, or prerequisite: STS

131. Limited. Two lectures and one laboratory per week. Crosslisted with Physics Department.

Mr. Goble

Offered every year

230 THE ENERGY FUTURE: PATHS AND POLICIES

A wide-ranging examination of the global energy situation and the "crisis" facing our energy-intensive industrialized nation. In the first several weeks basic information is presented about trends and patterns in consumption, future availability of oil and other resources, and the environmental, economic, and social costs of energy production. The second half of the course focuses on alternative scenarios for the future, with emphasis on the potential role for conservation and factors affecting the emergence of an energy efficiency ethic. Some background in energy science or technology is helpful, and permission of the instructor is required.

Mr. Ducsik

Offered every other year

232 THE CAMPUS ENERGY SELF-STUDY

A project course tied to ongoing faculty research aimed at improving the energy efficiency of the University's buildings and heating system. Topics currently under investigation are the technical and economic performance of the new cogeneration plant and monitoring of its air quality effects; heat loss characteristics of particularly inefficient buildings; and ability of student residents to reduce electricity consumption via inter-dormitory competition. Student work comprises a mix of field and laboratory measurements and practical calculations, with seminar discussion providing the necessary theoretical background and introduction to the general literature.

Mr. Goble

Offered every year

ENVIRONMENT-RELATED COURSES

057 CYCLES IN THE BIOSPHERE: INTRODUCTION TO ENVIRONMENTAL MANAGEMENT

Refer to course description under Geography 158.

Mr. Kates

135 CLIMATE AND THE NEXT CENTURY: PANIC OR PANACEA?

Refer to course description under Geography 135.

Ms. Nicholson

142 ENVIRONMENTAL CHEMISTRY

Refer to course description under Chemistry 142.

Mr. Jones

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT

Refer to course description under Economics 155.

Mr. Shakow

210 ENVIRONMENTAL PROTECTION LAW

Refer to course description under Environmental Affairs 210.

Staff

237 MANAGING THE COASTAL ENVIRONMENT

Barrier beaches, salt marshes, the waters above the continental shelf—these are among the most important and useful of our environmental

resources but also among the most seriously abused. This course is an introduction to the field of coastal zone management, practitioners of which must have some understanding of physical and ecological processes as well as of policy-making and law. Such literacy will be developed with reference to specific cases involving, for example, problems of shore erosion in Maine, storm hazards and wetlands destruction in Massachusetts, and ocean dumping of sewage sludge in New York. Crosslisted with Geography and Environmental Affairs.

Mr. Ducsik

Offered every other year

239 BIOLOGICAL AND HEALTH ASPECTS OF WATER POLLUTION

Refer to course description under Biology 239.

Mr. Reynolds

260 SEMINAR IN ATMOSPHERIC SCIENCE AND URBAN CLIMATOLOGY

Refer to course description under Geography 260.

Ms. Nicholson, Mr. Goble

275 CITIZEN PARTICIPATION: THEORY AND APPLICATION

Refer to course description under Geography 275.

Mr. Kasperson

HAZARD-RELATED COURSES

225 NUCLEAR POWER AS A SOCIAL ISSUE

Refer to course description under Geography 225.

Mr. Kasperson

226 HOW SAFE IS SAFE ENOUGH? RISK ASSESSMENT AND HAZARD MANAGEMENT

Refer to course description under Geography 226.

Mr. Kates

238 ISSUES IN PUBLIC HEALTH

Refer to course description under Biology 238.

Mr. Reynolds

248 HAZARDS OF THE WORKPLACE

Refer to course description under Geography 248.

Mr. Kasperson

Screen Studies

See Department of Visual and Performing Arts.

Sociology

DEPARTMENT FACULTY

Ruth Harriet Jacobs, Ph.D., Professor of Sociology, Department Chair

Edward E. Sampson, Ph.D., Professor of Sociology, Adjunct Professor of Psychology
Sidney M. Peck, Ph.D., Associate Professor of Sociology
Robert J. Ross, Ph.D., Associate Professor of Sociology
Elizabeth A. Stanko, Ph.D., Assistant Professor of Sociology
Andrea S. Walsh, Ph.D., Visiting Assistant Professor of Sociology

UNDERGRADUATE PROGRAM

The Department of Sociology has two major foci: *Social Psychology*—courses that focus on interaction between individuals and groups; and *Structural Sociology*—courses that deal with large scale structure and process at the societal level. While students may emphasize one or another of these areas in their course work, the department does not offer a formal concentration in any of them.

The departmental major consists of nine courses within the department and, usually, five additional courses in other departments selected from a set of focused options; the selection will be developed through close consultation with a major adviser. The nine departmental courses are to be divided as follows:

- I) At least one introductory course chosen from:
Introduction to Sociology
Introduction to Social Psychology
- II) At least one advanced theory course chosen from:
Sociological Theory: Classical
Sociological Theory: Contemporary
Social Psychological Theories
- III) At least one methods course chosen from:
Ethnomethodology
The Social Research Process
Research Methods in Social Psychology
(From time to time, other methods courses will be offered and may be substituted for the above listing; courses selected from the methods offerings in other departments may, with the consent of the student's adviser, be substituted for a methods course within sociology; the student can meet the methods requirement, but not the course requirement [i.e. nine courses in sociology] by this option.)
- IV) At least two courses chosen from the following:
Criminology
Social Movements
Urban Sociology
Social Stratification
Deviance
Industrial Sociology
- V) In their senior year or, in selected cases, before that, and in close consultation with their adviser, majors will select one of the following options:
Option A: *Thesis*: This is the equivalent of four full courses in sociology; it is designed for selected students who wish to devote approximately 50 percent of their senior year to a major research problem.
Option B: *Internship*: This is the equivalent of from two to four full courses; it is designed for selected students who seek supervised field training in community or organizational settings.

Option C: *Senior Seminar*: This is the equivalent of two full courses and consists of a year-long seminar devoted to an examination of major themes and issues in sociology.

Option D: *Course Work*: For those students who do not choose any of the other options, an additional four sociology courses are required; these may include core courses, directed readings, and special projects.

VI) *Related Courses*

In close consultation with their advisers, students will plan a program of additional courses that center on a coherent intellectual focus, which complements the substantive knowledge of and conceptual skills of the department curriculum. Such foci will, most usually, consist of courses taken in another social science department, but they may be interdepartmental, e.g., "urban focus" could include courses in government, geography, history, and/or economics.

The general expectation of the department is that such related course work will comprise five courses. This expectation may be higher for those who choose foci that entail taking elementary courses in preparation or as prerequisites.

GRADUATE PROGRAM

At the present time, the department is not accepting students for the master of arts degree.

COURSES

100 INTRODUCTION TO SOCIOLOGY

This is a general introductory course to the discipline of sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods on inquiry, and conceptions and analyses of society. The central objective of the course is to encourage students to think and feel sociologically.

Mr. Ross, Mr. Peck

Offered every semester

101 SOCIOLOGY OF EVERYDAY LIFE

This is a version of introductory sociology in which students look at the ordinary events of their biographies and current lives to discover the patterns that come from the complex nature of social organization, culture, and social structure.

Ms. Jacobs

Offered every year

105 INTRODUCTION TO SOCIAL PSYCHOLOGY

An examination of the relationship between the individual and the social system. The theories, methods, and findings of social psychology will be examined as they illuminate the major, enduring themes that confront human beings individually and collectively: e.g., the bases of knowledge and understanding; the individual and authority; freedom, reason, and responsibility; development, identity, and individuality; exchange and justice. Also listed for credit as Psychology 170.

Mr. Sampson, Staff

Offered every year

110 INTRODUCTION TO WOMEN'S STUDIES

An overview of the problems, issues, and research on sex role dichotomization and the biosocial systems that produce and maintain them.

While particular emphasis will focus on material from sociology and other relevant social sciences, topics from the humanities and the biological sciences also will be considered.

Staff

Offered every year

170 THE SOCIAL RESEARCH PROCESS

This course provides a general introduction to various methods employed in sociological research. The emphasis is on qualitative methods such as participant observation and interviews. Students learn about these methods by using them in projects of interest to them. Majors may meet the methods requirement by selecting this course, but the course is also available to nonmajors who wish to learn how to investigate social life. Selected studies in various methods are assigned reading.

Ms. Stanko, Ms. Jacobs, Staff

Offered every year

200 DIRECTED READINGS IN SOCIOLOGY

Offered for variable credit.

Staff

Offered every semester

201 SPECIAL PROJECT: PEACE ACTION RESEARCH

This special project will focus on the interrelationship between theory and practice in peace studies. Theoretical understanding of the international arms crisis will be tested in the practice of developing community organizing approaches to peace education outreach. Readings on the historical and sociological dimensions of the escalation toward nuclear war and the rise of mass movements to prevent the outbreak of nuclear war will be utilized throughout the project.

Mr. Peck

Offered every year

202 WORCESTER COMMUNITY STUDY

The Worcester Community Study is a research seminar oriented to descriptive evaluation and action research on any facet of the social structure of the Worcester community. Students who wish to add a research dimension to their special projects, internships, and practica are encouraged to participate in this seminar. Participants in the seminar will be expected to help coordinate small research teams engaged in a long-term study of the Worcester community.

Mr. Peck

Offered every year

203 SOCIOLOGY OF JEWISH AMERICANS

This course deals with the historical and contemporary situation of American Jews with an emphasis on community and religious organizations, socioeconomic and cultural situations, and intergroup relations. Special topics of interest to students are explored, and students do guided library or field research.

Ms. Jacobs

Offered every year

209 SOCIOLOGY OF WOMEN'S WORK

Explores women's work roles and focuses on gender stratification in the labor market. Topics include the work of the housewife, the transitions of women in and out of the labor force during the life cycle, career selection, displaced homemakers, and other areas of special interest to students.

Ms. Jacobs

Offered every year

210 WOMEN AND CRIME

In traditional criminology women's role in the criminal justice system is seldom a topic of focus. This course will concentrate on the role of

women, as criminal offenders and as the primary targets of male offenders. We will explore the traditional felony crimes, such as murder, robbery, victimless crimes, prostitution; treatment of women in courts and prison; victimology, such as rape and battered wives; and women workers within the criminal justice system, such as policewomen, etc.
Ms. Stanko
Offered every year

215 ETHNOMETHODOLOGY

Ethnomethodology, both theory and method, studies the actor's everyday world. This course's objective is to familiarize the student with the phenomena in everyday life. In addition, students will explore the use of video and taped conversation for purposes of analysis.
Ms. Stanko
Offered every other year

225 SOCIOLOGY OF SEX ROLES

The focus of the course is on the sex role socialization process. This is considered in relation to social class and caste, cultural variables, institutions, and political and psychological effects and implications.
Staff
Offered every other year

239 SOCIAL GERONTOLOGY

Considers the situation of the aged in human society. Specific attention will be devoted to the social role of the aged in the U.S. The way in which changes in the social structure affect the aged will require examination of several related issues confronting the elderly such as employment, retirement, income, housing, health care, education, sexuality, separation, dying, and death. A variety of social programs designed for the aged will be critically evaluated.
Staff
Offered every year

242 FIELDWORK SEMINAR IN SOCIAL GERONTOLOGY

Supervised placements for students in some area of the aging network will be supplemented by appropriate readings, written assignments, and group discussion.
Ms. Walsh, Ms. Jacobs
Offered every year

243 POLITICAL SOCIOLOGY

Politics may, for certain purposes, be seen as the result of structures of sentiment and power from which particular policies and institutions emerge. The course examines, in theory and research, class and political behavior, the political economy of power, sources of conflict and stability in modern society, and social movements.
Mr. Ross
Offered every year

246 SOCIAL PLANNING AND SOCIAL POLICY

This seminar will be concerned with the analysis of policy issues related to urban social problems. The seminar will address itself to three major objectives: (1) how social policy is formulated, (2) how social problems are analyzed from the perspective of the policy makers, (3) how social policy addresses problems of social importance in urban society. Students will be introduced to the literature of the field and will be given opportunities to analyze specific social problems.
Mr. Ross
Offered every other year

247 URBAN SOCIOLOGY

The ethnic and other communities of the big cities will be examined through the literature of historical and community studies; these ma-

terials will provide the basis for interpreting urbanism and the politics of the recent period. The political machines, the functions of social policy, and the problems of our big cities are some of the broader issues to be discussed.

Mr. Ross

Offered every year

248 SEMINAR IN GLOBAL CAPITALISM

This seminar will examine processes of economic and social development in two regional frameworks: changes in the structure of industrial regions of the advanced capitalist countries and changes in the structure of developing and more peripheral regions. The conceptual framework will be that of a global capitalist system undergoing significant transformation in the deployment of labor and capital. Also listed for credit as Government 289 for Fall 1982.

Mr. Ross, Mr. Trachte

Offered every year

249 IMAGES OF WOMEN IN FILM/SCREEN AND SOCIETY

Thematic explorations of the ways in which the screen media have reflected/affected their contemporary society. Content varies each time the course is taught, and it may be taken more than once. This year, a study will be made of "the Hollywood heroine." Lectures, screenings, and discussion seminars. Sociology majors may find it helpful to have as background courses Screen Studies 101 and 103. Also listed for credit as Screen Studies 211.

Ms. Stanko, Mr. Hodgkinson

Offered every other year

250 CRIMINOLOGY

The course constitutes a survey of 1) whom the criminal justice system processes, 2) how this is done, and 3) what social science has learned about the social nature of crime.

Ms. Stanko

Offered every other year

255 THE FAMILY

Critical, historical, and feminist perspectives on the institutions of marriage and the family. The seminar will consider comparative, historical, and theological analyses of the social role of women vis-à-vis the role relationships inherent in marital institutions.

Staff

Offered every other year

256 SOCIAL STRATIFICATION

An analysis of the major dimensions of social stratification in contemporary society. Economic class, social status, power, class consciousness, social mobility, and the consequences of class difference are studied.

Mr. Peck

Offered every other year

257 COMPARATIVE URBANIZATION

There are four dimensions of comparison upon which this course will be based: historical, cross-national within advanced capitalism, a cross-system of social relations, i.e., capitalist as compared to socialist urbanization, and finally, a contrast between the processes and structures of urbanization in the First and Third Worlds.

Mr. Ross

Offered every year

260 SOCIAL PSYCHOLOGY OF IDENTITY

In this course we examine the concept of self or identity as it develops within the social world. Identity will be approached from a life span-

developmental perspective, a comparative perspective, and a social psychological perspective. The course will attempt to join a theoretical with an experiential process of teaching-and-learning. Prerequisite: Introduction to Social Psychology. Also listed for credit as Education 259 and Psychology 255.

Mr. Sampson

Offered every other year

261 CRIMINAL JUSTICE IN AMERICA

The criminal justice system is a complex set of roles and perspectives, traditionally viewed as an integrated unit—processing individuals arrested for criminal offenses. This course is designed to view the criminal justice system as a topic for inquiry into social relations of institutions, which are studied as isolated agencies (i.e., law enforcement, court process, corrections) as well as an “integrated” system as a whole.

Ms. Stanko

Offered every year

263 DEVIANCE

This course has two fundamental objectives: (1) to introduce the student to the literature, research, and conceptual problems in the field of deviance; and (2) to examine conceptual frameworks out of which contemporary definitions of deviance emerge.

Ms. Stanko, Staff

Offered every other year

265 SOCIAL MOVEMENTS

This course will discuss the general characteristics of modern social movements with the New Left and other protests of the sixties as extended case examples. Problems of recruitment, organization, and ideology will be analyzed. The form of the course will depend on the size of registration.

Mr. Ross

Offered every other year

270 RESEARCH METHODS IN SOCIAL PSYCHOLOGY

This course builds upon a familiarity with the field of social psychology and some of its research methods and focuses on team conducted research studies of topics of special interest to the seminar members. Prerequisite: Introductory Social Psychology and some prior knowledge of research methodology. Also listed for credit as Psychology 229.

Mr. Sampson

Offered every other year

282 INDUSTRIAL SOCIOLOGY

This course is concerned with the study of social relations in the industrial setting. The course will cover the research tradition beginning with the human relations school and extending through the sociology of work and occupations. A special focus of the course will be on workers' organizations and the sociology of labor.

Mr. Peck

Offered every other year

287 ADVANCED TOPICS IN SOCIAL PSYCHOLOGY: TOWARDS A CRITICAL SOCIAL PSYCHOLOGY

This seminar examines alternative perspectives to the dominant points of view (theories and methods) in social, personality, and developmental psychology. The emphasis will be on the writings of the Frankfurt School, and on more “contextualized” approaches within the American tradition itself. Our intention is to examine these various perspectives and their implications for the study and practice of social

(and related) psychology. Permission of instructor required. Also listed for credit as Psychology 284.

Mr. Sampson

Offered every other year

290 SOCIOLOGICAL THEORY: CLASSICAL

Beginning with the European writings of the early sixteenth century and extending to the expression of social theory at the turn of the twentieth century, the course focuses on the way in which certain social themes dealing with human relationships were treated by the classic works of outstanding European social philosophers and theoreticians. These social themes refer to issues of value consensus and social conflict, established power and rebellious disorder, the social person and the alienated human. Oriented to a sociology of knowledge perspective, the range of ideas, beginning with Machiavelli and More and ending with Weber and Simmel, is considered in the context of the history and social structure of national capitalism as it emerged in the specific settings of Italy, England, France and Germany.

Mr. Peck

Offered every other year

291 SOCIOLOGICAL THEORY: CONTEMPORARY

Social developments in the United States during the post-World War II epoch have given rise to a variety of theoretical views in the field of sociology. Diversity of approach and fragmentation of theoretical stance will be related to significant changes in social structure and political economy of the United States during the past three decades. The relationship between social theory and political ideology will be considered throughout.

Mr. Peck, Staff

Offered every other year

292 SOCIAL PSYCHOLOGICAL THEORIES

This course examines some of the major theoretical contributions to social psychology, including Lewin, Mead, Freud and others and selected representatives of the critical tradition, including Adorno, Horkheimer and Marcuse. Prerequisite: Introduction to Social Psychology. Also listed for credit as Psychology 273.

Mr. Sampson

Offered every other year

294 TOPICS IN SOCIOLOGICAL THEORY: STUDIES IN MARXISM

This seminar will examine some of the basic themes of Marxism through close study of a major primary source, supplemented with class presentations and secondary reading. The Marxian theoretical and philosophic origins will be explored, and the political economy of Marxism will be introduced.

Mr. Ross, Mr. Peck

Offered every other year

295 GROUPS AND FAMILY PROCESSES

This course combines theoretical and experiential modes of learning designed to familiarize the student with the skills and techniques involved in group work with families and other small groups. Permission of instructor required. Also listed for credit as Education 295 and Psychology 253.

Mr. Sampson

Offered every other year

296 ADVANCED TOPICS IN CRIMINAL JUSTICE

This course will be concerned with an in-depth view of the current issues in the field of criminal justice. Students will be responsible for developing a project, to include on-site experience.

Ms. Stanko

Offered every other year

297 TOPICS IN SOCIOLOGICAL THEORY: THE PERSON AND THE SYSTEM

Everywhere men and women strive for love and personal acceptance, but they receive these only at certain places and times. This course is primarily an analysis of theories of rational efficiency and communal or primary needs in modern society. It compares the orthodox theories of Weber and Parsons with the Marxist paradigm of alienation.

Mr. Ross

Offered every other year

298 SENIOR SEMINAR IN SOCIOLOGY

This course consists of a year-long seminar devoted to the examination of major themes and issues in sociology. It is the equivalent of two full courses.

Staff

Offered every year

299 THESIS SEMINAR

The course combines seminar with independent study on selected topics and is intended for senior sociology majors. Each member of the sociology faculty offers a set of topics and thesis issues; students should sign up with the faculty member whose areas of interests are most suited to their own. Emphasis in the course is upon independent work undertaken with faculty guidance and supervision. It is possible to take this as a year-long course that results in the submission of a thesis, thereby making selected students eligible to be considered for departmental honors in sociology. Students are awarded four full course credits.

Staff

Offered every year

299.9 INTERNSHIPS IN SOCIOLOGY

The course consists of supervised field training in community and organized settings. This is the equivalent of from two to four full courses in sociology. Variable credit.

Staff

Offered every semester

Spanish

See Department of Foreign Languages and Literatures.

Theater Arts

See Department of Visual and Performing Arts.

Visual and Performing Arts

Albert A. Anderson, Ph.D., Associate Professor of Philosophy, Department Chair

The Department of Visual and Performing Arts offers study in studio art, the performing arts, and in the history, criticism, and philosophy of the arts. Majors and concentrations are offered in a variety of program areas (listed below). For students planning careers in arts therapy, arts management, or communications, a major in a given area—such as music, screen studies, theater arts, or visual art—may serve as the core for a preprofessional program. In addition, individually-designed majors and concentrations are encouraged for students who wish to cross traditional disciplinary lines and develop a program of study incorporating two or more different areas of concentration. Students majoring in disciplines outside the arts are invited to participate in the department's programs and courses and to attend the department's many art exhibitions, film presentations, and musical, dance, and theatrical performances.

HISTORY, CRITICISM AND PHILOSOPHY OF THE ARTS

AESTHETICS

PROGRAM FACULTY

Albert A. Anderson, Ph.D., Associate Professor of Philosophy
Marilyn JS Goodman, M.A.T., Lecturer in Studio Art

Courses in aesthetics offer cross-disciplinary study of the arts designed to foster an understanding of what is common to the various modes of artistic creation as well as what separates them; to reflect upon the nature and presuppositions of critical and historical analysis of the arts; and to investigate the relationship between the arts and other aspects of human culture, such as politics, religion, science, and philosophy.

88 DIRECTED READINGS

Staff

89 SPECIAL PROJECTS

Staff

149 INTRODUCTION TO AESTHETICS

An examination of representative theories of the arts, aesthetic experience, creativity, and critical evaluation of art works. Alternative philosophical positions (e.g., existentialism, idealism, Marxism, empiricism) are studied through primary sources. Also listed for credit as Philosophy 149.

Mr. Anderson

One or more, but not necessarily all, of the following (Aesthetics 161–165) will be offered during the 1982–83 and 1983–84 academic years.

161 SYSTEMS FOR CREATIVITY—DESIGN GAMES

An experimental course focusing on creative problem-solving and reaching design goals. Methods such as brainstorming, analogy, matrices, fractionization, and synectics will be applied to problems in environmental design, architecture, and graphics. The goal will be to develop personal options and methods for creative ideas relevant to the

student's individual area(s) of study. Of interest to students in art, psychology, geography, management, environmental affairs, etc. Pre-requisite: permission of instructor.

Ms. Goodman

162 ART EDUCATION

An introduction to the recent literature and concepts of art education. Through readings and discussions, students will gain knowledge and skills in understanding current philosophical, psychological, and perceptual issues. Topics will include: research in cognitive and affective education, the relationship of art education to basic skills, aesthetic education, and the role of cultural institutions.

Ms. Goodman

163 ARTS MANAGEMENT AND ADMINISTRATION

The theories, functions, and practices of arts management in cultural organizations, community arts agencies, and educational institutions. Topics include public arts events, fundraising, grantsmanship, programming, operations, public relations, and the development of goals and objectives. Analysis of skills and approaches needed for leadership and cooperative planning.

Ms. Goodman

164 MUSEUM STUDIES

An introduction to the philosophy and functions of various departments within a museum, including: curatorial, conservation, membership development, public relations, and education. Emphasis will be placed on museum accessibility to the community as well as methods of interpreting the collection for children and the general public. Course meets at the Worcester Art Museum.

Ms. Goodman

165 CONTEMPORARY ARTS

An examination of contemporary innovations and movements in the visual arts. Related developments in arts such as film, dance, and architecture will be included to suggest the many possibilities for communication open to the contemporary artist.

Mr. Souza

245 SEMINAR: AESTHETICS

Advanced topics of central importance to philosophical aesthetics will be examined. Offerings vary each semester. Topics to be studied over the next several semesters include: Philosophy of Architecture, Philosophy of Painting and Sculpture, Philosophy of Literature, Philosophy of Music, Philosophy of Theater, Philosophy of Screen Art, Philosophy of Dance, Creativity in Art and Science, Philosophy of Criticism, The Cognitive Role of the Arts, The Arts in Human Culture, Philosophy of Art History, Space and Time in Art and Science. Also listed for credit as Philosophy 245.

Mr. Anderson

Offered every semester

299.9 INTERNSHIP

Variable credit.

Staff

ART HISTORY AND CRITICISM

PROGRAM FACULTY

Samuel P. Cowardin III, Ph.D., Associate Professor of Art History,

Program Director

Bonnie L. Grad, Ph.D., Assistant Professor of Art History

Rhys F. Townsend, Ph.D., Assistant Professor of Art History

Paul Burke, Ph.D., Associate Professor of Classics (Adjunct)

Courses in art history provide an introduction to the discipline and opportunities for more specialized study. They offer enrichment for nonmajors as well as a core of knowledge for majors. Through systematic close examination of works of art in their cultural context, students develop visual sensitivity and critical skills while building a fundamental command of the field.

The major in art history and criticism can serve as a meaningful humanistic focus for liberal arts education for students who appreciate art and are interested in its social, cultural, and historic ramifications. It can also provide a foundation for graduate study for highly motivated students interested in teaching, museum and gallery work, arts conservation, or arts management. The major offers opportunity for concentration in areas such as ancient, Renaissance, and modern art history and permits individual study in areas of special interest.

Specific requirements for the art history major are reviewed periodically by the faculty. At present, admission to the major requires at least a grade of B in the two-semester Art 11 foundation (or equivalent courses or superior advanced placement performance) and approval of the program faculty. Students must then complete: four art history courses in a single area (e.g., ancient Renaissance, modern); four art history courses outside this area; four courses outside art, related to the area of concentration; three studio courses; and the senior project in art history. In the case of double majors, each of the four groups is reduced by one course, for a total of twelve.

Requirements for the combined art history/studio major may be obtained from the program faculty or director.

COURSES

10 VISUAL FORM AND STYLE

An introduction to the visual arts through analysis of artistic form and style. The physical and expressive qualities of materials, the elements of design, and the means of visual expression will be stressed. The aim of the course is to develop visual sensitivity and verbal facility in dealing with visual material. Extensive practice in descriptive and critical writing. Limited to freshmen and sophomores.

Mr. Cowardin

Not offered on a regular basis

11 INTRODUCTION TO WESTERN ART I

Ideally, the first half of a two-semester sequence, this course covers classical, medieval, and Renaissance art. The first several weeks are devoted to an examination of basic elements in the visual arts, and to certain fundamental matters of terminology and approach. Selected works are then discussed as exemplars of style and artistic quality in

the context of the leading ideas of their respective eras. Students are encouraged to observe original works in local museums.

Mr. Townsend

Offered every year

11 INTRODUCTION TO WESTERN ART II

Surveys the history of Western art from sixteenth-century Mannerism to contemporary art. In general, emphasis will be placed on the analysis of style in relation to the specific historical and social environment from which it emerges as well as on the formal development of individual artists. Attention will be given to the major artists in the history of art, such as Rembrandt, Goya, Picasso, Stieglitz, and Rauschenberg. The class will take two field trips to the Worcester Art Museum.

Mr. Townsend

Offered every year

88 DIRECTED READINGS

Staff

89 SPECIAL PROJECTS

Staff

99 SENIOR PROJECT IN ART HISTORY

Required of all majors in art history and criticism.

Staff

Offered every semester

110 ANCIENT GREEK ART AND ARCHITECTURE

Refer to course description under Classics 110.

Mr. Burke

111 ANCIENT ROMAN ART AND ARCHITECTURE

Refer to course description under Classics 111.

Mr. Burke

115 MEDIEVAL ART

Examines the development of Christian art from the end of the ancient world to the dawn of the Renaissance. Certain themes receive special emphasis; the relationship of medieval art to the classical tradition, the impact of the art of the migrations and contacts with the East, the structural development in architecture and its expressive import are a few such themes. If enrollment permits, class reports on pertinent topics will be built into the course. Prerequisite: one course in art history.

Mr. Cowardin

Offered every other year

120 ITALIAN RENAISSANCE ART: FIFTEENTH CENTURY

Concerns art in the context of developing humanism and rationalism, mainly in Florence, but with excursions into northern Italy. The aim is to delineate the character of early Renaissance art and to distinguish its principal stylistic currents as they move toward confluence in the High Renaissance. Particular attention is given to the ideas of Alberti and some of the intellectuals in the circle of the Medici. Architecture, sculpture, and painting receive approximately equal emphasis.

Mr. Cowardin

Offered every other year

121 ITALIAN RENAISSANCE ART: SIXTEENTH CENTURY

The great figures of High Renaissance art in Florence and Rome are the focus of the first part of the course. It will try to define, through readings

and discussion, the special aesthetic qualities of this particular "classic moment," seen against the political and intellectual background. The course also must confront the difficult questions relating to the evolution of Mannerism, as well as the definition of this phenomenon. Finally, the scene will shift briefly to Venice. Class participation is encouraged.

Mr. Cowardin

Offered every other year

122 MICHELANGELO AND THE HIGH RENAISSANCE

Concentrates on Michelangelo's work in architecture, sculpture, and painting, taking into account personal, religious, intellectual, and political influences on his life. His style will be viewed in relation to the Renaissance background as well as the Mannerist trends of the sixteenth century.

Mr. Cowardin

Offered every other year

124 NORTHERN RENAISSANCE PAINTING

Concentrates on painting in Flanders from Van Eyck to Bruegel. Style, technique, and expression in representative works will be viewed in relation to their own background and to contemporary work in Italy. A secondary focus will be on the impact of Italian influence upon the art of France, Germany, and the Netherlands in the sixteenth century.

Mr. Cowardin

Not offered on a regular basis

140 MODERN ART: NINETEENTH CENTURY

A survey of the revolutionary movements in European art from neo-classicism to postimpressionism, with special emphasis on the development of the avant-garde. Both the formal characteristics of styles and the cultural and social context from which they emerged will be examined. Attention will be paid to the reciprocal relationship between the visual arts: between painting and printmaking throughout the century and painting and photography after 1845.

Ms. Grad

Offered every other year

142 MODERNISM

A study of the modern imagination as it developed in the art of Europeans and Americans from the turn of the century to World War II. Two major issues, expressed as polarities in content and form, will be explored in class lectures and "modernist workshops"—on the one hand, the incorporation of the non-art object (newspapers, playing cards, hatracks) into the art object, as in Picasso's and Braque's cubist collages and Duchamp's readymades; on the other, the elimination of reference to the object, as in the abstract, nonrepresentational painting of Kandinsky, Malevich, and Mondrian.

Ms. Grad

Offered every other year

143 ART SINCE 1945

A survey of the major movements of contemporary American and European art, including abstract expressionism, environments and happenings, pop art, minimalism, earth art, and the new realism. The increasing importance of the commercial environment, popular culture, and technology will be explored as a major theme in the art of the sixties. Each student will assume the separate roles of artist, critic, and art historian—creating an object, criticizing an exhibit or work of art, and formally analyzing a museum work—as a means of coming to terms with relevant formal and critical issues.

Ms. Grad

Offered every other year

144 IMPRESSIONISM

Under Napoleon III (1851–1870), Paris was physically transformed into a modern city of tree-lined, spacious boulevards, parks, landscaped squares, and public gardens. Impressionists painted not only the countryside and seaside resorts, but also the beauty and richness of this urban environment. This course explores in depth the styles of Manet, Monet, Renoir, Degas, Sisley, and Pissarro, and examines the formal and coloristic characteristics of these artists as well as the particular social, economic, and political context from which urban and rural impressionism emerged. Prerequisite: Art 140 is recommended.

Ms. Grad

Offered every other year

148 LANDSCAPE

A study of the changing vision of nature in Western culture as it is expressed in painting from the Renaissance to the present. The relationship between landscape art and man's changing relationship to the land, due to social, economic, and cultural factors, will be explored in depth. Special attention will be paid to the seventeenth, nineteenth, and twentieth centuries—periods in which the greatest transformations in the landscape occur. Readings in cultural geography and literature will supplement art historical writings.

Ms. Grad

Not offered on a regular basis

149 URBAN AND PASTORAL VISIONS IN TWENTIETH CENTURY ART

This advanced seminar will explore these two distinct sensibilities in twentieth-century painting and the cultural sources of such visions. At one extreme are pastoralists, who retreat to the countryside to create their landscape art in solitude; Georgia O'Keeffe and Milton Avery are among them. At the other are urbanists such as Stuart Davis and Joseph Stella, who embrace the excitement of city life, its noise and dynamism, in their lives and art. Readings will include a variety of sources outside the history of art. Prerequisite: permission of instructor.

Ms. Grad

Not offered on a regular basis

150 INTRODUCTION TO ORIENTAL ART: ANCIENT NEAR EAST AND INDIA

A preliminary look at the Near East is designed to acquaint the student with the styles and iconography of ancient Mesopotamian and Iranian art as a background for developments in India and central Asia. The major part of the course deals with Indian art from prehistoric times through the period of the Moslem dynasties, and with the spread of Indian culture into Indo-China and Indonesia. Monuments of Buddhist and Hindu art are studied and discussed in the light of the faiths which inspired them. The philosophy, mythology, and iconography of these faiths are the subjects of background readings intended to inform the discussion. Aside from its intrinsic value, this material is basic to further study of Buddhist art in China and Japan.

Mr. Cowardin

Offered every other year

151 INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN

The greater part of the course (about two thirds) is devoted to the art of China from the beginnings through the Yuan Dynasty. As an introduction, the course does not pretend to be complete, but singles out for study certain periods and classes of objects, such as Shang and

Chou bronzes, Buddhist sculpture, and Sung paintings, at the expense of others, such as ceramics and later paintings. The objective is to arouse interest and develop sensitivity to different artistic points of view and aesthetic values, while laying the foundations for further study. The same approach is carried over to Japan in the remainder of the course, where emphasis is placed on Buddhist sculpture, narrative and landscape scroll paintings, and color woodblock prints.

Mr. Cowardin

Offered every other year

160 ARCHITECTURE

An introduction to architecture as an art form, emphasizing style and expression. The stylistic evolution will be followed from ancient Greece to the present day, with special attention to the structural and expressive potential of material, spatial and functional organization, and environmental factors. Buildings will be studied in the context of contemporary thought and other art forms.

Staff

Offered every other year

175 THE WOVEN TEXTILE

An introduction to this art form, considered from historical, technical, and stylistic approaches. Because the character of a textile is developed within and determined by the discipline of the craft, we will discuss the fibers, tools, and structures of weaving. These fundamentals will then be applied to the consideration of woven textiles within cultural contexts, and in relation to their function, meaning, and aesthetic quality. Peruvian, Coptic, Persian, Indian, Indonesian, Scandinavian, and American textiles will be discussed. Field trips to the Boston Museum of Fine Arts, Hartford's Wadsworth Atheneum, and the Yale University Art Gallery.

Ms. Buie

Not offered on a regular basis

279 THE AMERICAN LANDSCAPE

An interdisciplinary course, with emphasis on landscape painting, photography, and architecture in America. Through images of nature in art, we will consider the changing cultural attitudes towards the American landscape. While readings will be drawn from art history, they also will include literature and geography, as this course is designed as a cluster in conjunction with Professors Douglas Johnson (Geography 279) and John Conron (English 279).

Ms. Grad

Not offered on a regular basis

299.9 INTERNSHIP

Variable credit.

Staff

MUSIC HISTORY, CRITICISM, AND THEORY

PROGRAM FACULTY

Gerald R. Castonguay, Ph.D., Associate Professor of Music, Program Director

Wesley M. Fuller, M.Mus., Associate Professor of Music

Relly Raffman, M.A., George N. and Selma U. Jeppson Professor of Music

Hartmut Kaiser, Ph.D., Associate Professor of German (Adjunct)

The music program offers a preprofessional course of study for the

music major and courses and activities for the nonmajor. Courses are designed to teach students to listen to music intelligently, to develop a comprehension of music on its own terms, to master basic skills of music and apply them creatively, and to acquaint students with representative works from various periods of music history.

Courses are open to majors as well as nonmajors and assignments are designed to suit the different goals and backgrounds of the students in each category.

The Music Major includes the following courses:

- Theory: 121 [Prerequisite: Music 120 (Rudiments of Music) or placement examination]
- Theory: 122, 123, 124, 125
- Music History: 11, 12, 13, 14, 15, 16

The major who is concentrating in performance may, with permission of the faculty, waive the 11 and 122 requirements.

- Performing Groups: a minimum of four semesters in 107, 117, 127, 130, or 137
- Related areas: a full course in aesthetics, art, theater arts, or screen studies
- A minimum skills test, including sight-singing and dictation at a level of proficiency necessary for successfully pursuing the major, must be passed during the sophomore year. A keyboard proficiency test must be passed during the junior year.

Major Concentration Areas: The professionally oriented major may, by permission, concentrate in composition, theory, history, or performance.

For the performance concentration, private lessons are taken throughout the major program; other concentrations require individual tutorial work, usually undertaken only in the senior year. The major culminates in one of several types of final projects such as papers in historical research and theoretical research, compositions, and, in the case of the performance concentration, a senior recital preceded by appearances in student recitals. The performance concentration also requires a senior seminar dealing with stylistic analysis of the music to be performed on the senior recital. The program stresses the advantages of combining such professional musical development with the humanistic breadth offered by a strong liberal education.

Students planning to enter professions such as music therapy or concert management may incorporate music courses with appropriate courses from other disciplines in an individually-designed major. The requirements for such preprofessional programs are jointly determined by the student and an advisory committee made up of one music faculty member (who serves as chair), and two faculty members from other disciplines.

Although the music program does not offer specific courses in music education, music majors may prepare for public school teaching by taking courses in music curriculum and practice teaching through the Education Department.

Performing Organizations: Nonmajors and majors may audition for a variety of organizations, including the Clark Concert Choir, the Worcester Consortium Orchestra, Instrumental Chamber Ensembles, and the Jazz Workshop.

Private Lessons for majors and nonmajors are offered with or without credit in many different areas. (Refer to Music 18 course description.)

Placement Test: Prospective students considering a music major are urged to contact the program director to arrange for a placement test, which may be administered through Clark or through an authorized person at the student's current place of study. Although not required, this test enables the faculty to assess the student's present musical development and offer more informed advice. In some cases, it is possible to offer advanced theory placement as a result of the test.

Auditions: Students who wish to follow a performance concentration should arrange for an audition by contacting the program director.

INTRODUCTORY COURSES

10 INTRODUCTION TO MUSIC

Designed for the nonmajor, this course is a prerequisite for entrance into all music history courses. Its goal is to expand the concept of the musical experience and to develop discriminating listeners. Taught jointly by several faculty members, it also provides an introduction to the music program. The course includes an introduction to principles of rhythm, pitch, timbre (and their notations); the principles of structure; the aesthetics of music; specific forms including fugue, sonata-form, variations, etc.; and selected historical styles.

Staff

Offered every semester

100 INTRODUCTION TO MUSIC II

A continuation of Music 10, this course is designed for those students who want to explore masterworks from various periods in more depth. Each work will be studied not only for its musical structure, but as a product of its time and its particular culture. The course is structured for the nonmajor. Prerequisite: Music 10.

Staff

Not offered on a regular basis

120 RUDIMENTS OF MUSIC

An introduction to the fundamentals of music; no previous experience is necessary. The course includes notation, ear-training, sight-singing, score reading, and elementary melodic and harmonic organization. The course satisfies the prerequisite for credit in Music 18, and entrance to Music 121.

Staff

Offered every year

MUSIC HISTORY

11 MEDIEVAL AND RENAISSANCE PERIODS

Beginning with early Christian chant, this survey includes a study of the medieval song and motet, the growth of polyphonic secular and sacred music extending through the sixteenth century, culminating with the study of the Renaissance mass and madrigal. Works are performed in class, and scores are used for the majority of works studied. Prerequisite: 10, 120, or permission of instructor.

Mr. Castonguay

Offered every other year

12 BAROQUE PERIOD

A survey of music from 1600 to 1750, the course deals with the origins and growth of vocal and instrumental genres (opera, oratorio, cantata,

sonata, concerto, etc.) and the wide variety of formal types closing with the works of Bach and Handel. When possible, works are performed in class, and scores are used for works studied. Prerequisite: 10, 120, or permission of instructor.

Mr. Castonguay

Offered every other year

13 CLASSICAL PERIOD

This survey of music from the 1720s to the early decades of the nineteenth century focuses on the Italian, French, and Viennese styles. Special emphasis is given to the music of Haydn, Mozart, and Beethoven and the important musical genres of chamber music, symphony, and opera. Miniature scores are required for some of the works studied. Prerequisite: 10, 120 or permission of instructor.

Mr. Castonguay

Offered every other year

14 ROMANTIC PERIOD

Surveys the music of the major composers of the nineteenth century. The musical style and selected works of Schubert, Mendelssohn, Schumann, Chopin, Brahms, Tchaikovsky, Wagner, and others are studied and placed within the literary and artistic setting of nineteenth-century society. Miniature scores are required for some of the works studied. Prerequisite: 10, 120 or permission of instructor.

Mr. Castonguay

Offered every other year

15 TWENTIETH-CENTURY MUSIC I

A survey of early twentieth-century masterworks. Representative composers include: Debussy, Ravel, Prokofiev, Stravinsky, Bartok, Hindemith, Schoenberg, Berg, and Webern. Prerequisite: 10 or 120.

Mr. Raffman

Offered every other year

16 TWENTIETH-CENTURY MUSIC II

A study of important works composed primarily since 1950. Composers include Stravinsky, Cage, Carter, Boulez, Messiaen, Stockhausen, and others. Prerequisite: 10 or 120.

Mr. Fuller

Offered every other year

17 THE MUSIC OF JOHANNES BRAHMS

The course considers Brahms as man and musician in the latter half of nineteenth-century Vienna. Detailed analyses of his chamber and orchestral music, lieder, and keyboard works are undertaken. Whenever possible, works will be performed live in class. Although scores will be provided in the majority of cases, students will be expected to purchase several scores for extended study. Prerequisite: 10, 120 or permission of instructor.

Mr. Castonguay

Offered every other year

19 WORLD MUSIC

Students study and listen to the differences and likenesses in music from a wide variety of cultures and consider the ways in which music, ranging from classical art music to music for work and communal celebration, functions within cultures. Musics of India, Africa, Japan, China, Iran, Java, and Louisiana Cajun are some of the recurring areas. Guest performers of ethnic music are part of the course.

Mr. Fuller

Offered every other year

20 CHAMBER MUSIC

A survey of selected works of the major composers in the field of chamber music from Haydn to Stravinsky. Trips to concerts in the surrounding area will be made whenever feasible. Prerequisites: 10, 120, or permission of instructor.

Mr. Castonguay

Not offered on a regular basis

113 J.S. BACH AND HIS MUSIC

The course investigates the social, historic, and cultural setting of Bach's era, and, in particular, encompasses an intense study of his music, including the early cantatas and organ works, the instrumental music from his Cothen period, and, finally, the mature cantatas of his Leipzig years. When possible, works will be performed in class and scores will be provided for the majority of works studied. Prerequisite: 10 or 120, or permission of instructor.

Mr. Castonguay

Offered every other year

114 BEETHOVEN: THE MAN AND HIS MUSIC

Explores the social and historical background of Beethoven's Vienna and centers on the study of selected works from the important genres (symphony, chamber music, and sonata) throughout Beethoven's career. Miniature scores are required for a number of works studied. Prerequisite: 10, 120, or permission of instructor.

Mr. Castonguay

Offered every other year

118 SENIOR TUTORIAL IN MUSIC HISTORY

For majors only. Full course. Prerequisite: permission of instructor.

Staff

Offered every semester

132 JAZZ HISTORY

Centers on a study of the evolution of jazz style from its nineteenth-century beginnings to the present day: African roots, minstrels, ragtime, Dixieland, swing, bop, progressive, cool, free-form, and third-stream. A research paper and a final exam are required. Half course.

Mr. Raffman

Offered every other year

With permission of the program director, the following courses offered by other departments may be taken for music history, criticism, and theory credit.

German 168 MUSIC IN GERMAN LITERATURE AND THOUGHT

Refer to course description under Foreign Languages and Literatures.

Mr. Kaiser

German 197 THE FAUST THEME IN LITERATURE AND MUSIC

Refer to course description under Foreign Languages and Literatures.

Mr. Kaiser

MUSIC THEORY

121 PRIMARY THEORY

A study of the structure of tonal music, this two-semester course includes analytical and compositional problems in homophonic, monodic, and polyphonic textures, basic orchestration, ear-training, sight-singing, and conducting. Prerequisite: 120 or entrance examination (given at first class meeting). Divisible course.

Mr. Raffman

Offered every year

122 THEORY: MODAL COUNTERPOINT

Contrapuntal styles in two-, three-, and four-part textures of major composers of the fifteenth and sixteenth centuries are analyzed and used as a foundation for compositional assignments. Twentieth-century modal polyphony is also studied. Prerequisite: 121.

Mr. Fuller

Offered every other year

123 THEORY: EIGHTEENTH-CENTURY COUNTERPOINT

Deals with compositional and analytical problems in the eighteenth-century contrapuntal idiom; two- and three-part inventions, canon, and fugue. The thoroughbass practice of the seventeenth and eighteenth centuries is explored. Final project: the composition of a three- or four-voice fugue. Prerequisite: 121.

Mr. Raffman

Offered every other year

124 THEORY: NINETEENTH-CENTURY PRACTICE

Deals with problems in analysis, composition, and orchestration in the chromatic style of the nineteenth century. Works of Beethoven, Chopin, Schumann, Wagner, and Brahms are analyzed and used as compositional models. The harmonic language of impressionism, with its emphasis on scalar control, also is examined. Prerequisite: 121.

Mr. Raffman

Offered every other year

125 THEORY: TWENTIETH-CENTURY PRACTICE

Compositional techniques of major twentieth-century composers are studied and used as a basis for analysis and compositional assignments. Prerequisite: 124 or permission of instructor.

Mr. Fuller

Offered every other year

128 SENIOR TUTORIAL IN COMPOSITION

For majors only. Full course. Prerequisite: permission of instructor.

Staff

131 JAZZ THEORY

Includes a study of the rhythmic/harmonic/melodic structures of jazz, the scalar basis of improvisation, and voicing practice as it pertains to scoring for small and large ensembles. Prerequisite: 120 or passing of placement examination in rudiments.

Mr. Raffman

Offered every other year

133 TUTORIAL IN JAZZ COMPOSITION

The student writes original scores for performance by workshop ensemble. Prerequisite: 131 and permission of instructor.

Mr. Raffman

Offered every year

138 SENIOR TUTORIAL IN THEORY

For majors only. Full course. Prerequisite: permission of instructor.

Staff

SPECIAL OFFERINGS

88 DIRECTED READINGS

Staff

89 SPECIAL PROJECTS

Staff

90 DIRECTED STUDIES IN ELECTRONIC MUSIC

Advanced work in any of the main areas of electronic music: composition, hardware or software design, psychoacoustics. Work may center on either analog (synthesizer) or computer music. Resources of the Tri-College Electronic Music Program are made available to students. Prerequisite: 140 or permission of instructor.

Mr. Fuller

Offered every year

135 SEMINAR: THE COMPOSER AND SOCIETY

Topics will revolve around the effects that institutions, whether governmental, religious, economic, or sociomusical, have upon the artistic life of the composer. Psychological and artistic effects upon the composer and various approaches taken by composers to find and maintain artistic identity and integrity will be explored. Projects will focus on periods and composers decided upon by the students and the instructor. Nonmajors and majors are welcome.

Mr. Castonguay

Offered every other year

140 INTRODUCTION TO ELECTRONIC MUSIC

Part of the Tri-College Program in Electronic Music, the course is intended to provide a greater understanding of electronic music as a natural, historical, and artistic result of twentieth-century musical and technological achievements. It begins with parallel discussions of the physical description of sound and of pre-1959 musical developments and continues into the three major phases in the history of electronically produced sound, the processing of natural and electronic sound sources with tape recorder and laboratory methods, the voltage controlled synthesizer, and the techniques of computer generated sound. A group of important musical works will be studied. The course will include directed work in the analog synthesizer studios. Team taught by two composers and a physicist.

Mr. Fuller, Mr. Jasperson (WPI), Mr. Korde (Holy Cross)

141 SOUND INVENTION WORKSHOP/ELECTRONIC

A studio workshop which instructs students in the use of the Clark Electronic Music Studios' sound-making and processing equipment. Members of the workshop (primarily visual and performing arts students) will acquire basic skills of synthesizer use, taping, and mixing, and will develop a personalized project, such as a soundtrack for a film or videotape, a tape music composition, music for a theatrical event, or sounds for visual installations. Each time the workshop is offered, a standard musical instrument will be explored for its potential combination with electronic sounds and as a source for a musique-concrete project. Prerequisite: permission of instructor.

Mr. Fuller

Not offered on a regular basis

170 IN-FORM-ATION: MEANING THROUGH STRUCTURE IN MUSIC AND THEATER

Explores the ways in which form creates meaning. A set of common concepts is used to look at qualities of structure in a variety of creative experiences. The goal is to develop in the student the ability to recognize the significance of forms, whether they occur in art or in everyday life. The course assumes that some of the most meaningful insights into a particular subject may be gained by bringing to bear upon it the critical methods of other areas of knowledge. Also listed for credit as Comparative Literature 170.

Mr. Fuller, Mr. Spingler

Not offered on a regular basis

182 ROMANTICISM IN THOUGHT, LITERATURE AND THE ARTS

The course assumes that some of the most meaningful Refer to course description under Humanistic Studies. Also listed for credit as Comparative Literature 182, Philosophy 182, and English 182.
Staff

299.9 INTERNSHIP

Variable credit.
Staff

SCREEN STUDIES

PROGRAM FACULTY

Anthony W. Hodgkinson, Professor of Screen Studies
Philip Rosen, Ph.D., Assistant Professor of Screen Studies, Program Director
Marvin A. D'Lugo, Ph.D., Associate Professor of Spanish (Adjunct)
Walter Schatzberg, Ph.D., Professor of German (Adjunct)
Michael K. Spingler, Ph.D., Associate Professor of French (Adjunct)
James P. Elliott, Ph.D., Assistant Professor of English (Adjunct)

UNDERGRADUATE PROGRAM

The program in screen studies is designed to help students acquire a critical understanding and appreciation of the screen media, through the viewing, discussion, analysis, and evaluation of a large number of significant works (the emphasis of most courses) and analysis and discussion of current communications media trends. Many of the courses are designed to focus especially on the historial and social impact of the screen media; others concern themselves with the media's aesthetics, technologies, and techniques. Screen studies may thus take a variety of forms, dependent on the individual student's special interests in the screen media—their history, nature, aesthetic value, social and psychological impact, etc.

Career opportunities include work in the film and video community; in film libraries, museums and archives; in cable television, film, video cassette and videodisc distribution; and in film and television journalism.

Screen production courses are offered through the Studio Art Program.

COURSES

88 DIRECTED READINGS

Staff

89 SPECIAL PROJECTS

Staff

91 SEMINAR IN ARTS MANAGEMENT: CINEMA

Concentrating especially on Atwood Repertory Cinema, this seminar allows students to choose their own area of interest (e.g., researching 35mm archives; projecting 35mm films; preparing programs and program notes; liaison with community groups, museums, etc. Prerequisite: 101 and at least one other screen studies course.

Staff
Offered every other year

101 INTRODUCTION TO SCREEN STUDIES: THE ELEMENTS OF SCREEN LANGUAGE

A survey of the varied techniques used in the making of all screen communications (film, television, video): the invention of the language, silent film narrative, editing, music, speech, and sound. Lecture/screenings, analyses of two or three feature films, term papers, and readings. Prerequisite for other screen studies courses.

Mr. Rosen

Offered every semester

104 SCREEN EXPERIMENT

A survey of experimental film and video from the beginning of cinema to the present. Forms to be covered include animated and abstract films, surrealist experiments, city symphonies, experimental documentaries and narratives, etc. Topics will vary each time the course is offered. Limited to 15 students. Prerequisite: 101.

Mr. Rosen

Offered every other year

One or more, but not necessarily all, of the following will be offered during the 1982–83 and 1983–84 academic years.

200 THE FILM STUDIO TEAM

In a series of lecture/screenings, the contributions to the feature film of each of the major members of the studio team—writer, director, actor, etc.—are examined, and two or three feature films are analyzed in detail. Term papers and readings. Prerequisite: 101.

Mr. Rosen

201 ASPECTS OF SCREEN HISTORY

Under this general heading, various facets of the 80 years of world cinema and television are explored in a series of lecture/screenings and discussion seminars. Content varies each time the course is taught, and it may be taken more than once. Prerequisite: 101.

Staff

211 SCREEN AND SOCIETY

Thematic explorations of the ways in which the screen media have reflected/affected their contemporary society. Content varies each time the course is taught and it may be taken more than once. Also listed for credit as Sociology 249. Prerequisite: 101.

Staff

221 SCREEN AUTEURS

A continuing series of lecture/screenings and discussion seminars in which an examination is made of the canon of work of individuals—producers, directors, writers, cinematographers, and others, who qualify as “auteurs” (i.e., primary “authors” of a film or television program or series). The individuals studied vary each time the course is offered, and it may be taken more than once. Prerequisite: 101.

Staff

231 SCREEN LITERATURE

A seminar in which some of the significant books of film theory, aesthetics, history, etc., are studied in detail and depth. Prerequisite: 101 and at least one other screen studies course. Enrollment is limited to 20 students.

Mr. Rosen

241 LITERATURE AND THE SCREEN

A course in which relationships between literary works and significant films are explored in detail and depth. Minimum prerequisites are introductory courses in both screen studies and literature. Limited enrollment, permission of instructors necessary. Also listed for credit as English 14.

Mr. Rosen, Mr. Elliott

299.9 INTERNSHIP

Variable credit.

Staff

With permission of the program director, the following courses offered by other departments may be taken for screen studies credit. For descriptions and details, please refer to course listings within the departments.

French 160 THE FILMS OF JEAN RENOIR

Mr. Spingler

Spanish 135 HISPANIC ETHOS AND CINEMA: THE FILMS OF LUIS BUNUEL

Mr. D'Lugo

German 150 MODERN GERMAN CINEMA

Mr. Schatzberg

THEATER ARTS HISTORY AND CRITICISM

PROGRAM FACULTY

Neil R. Schroeder, Ph.D., Associate Professor of Theater, Program Director

James F. Beard Jr., Ph.D., Professor of English (Adjunct)

Virginia Carr, Ph.D., Associate Professor of English (Adjunct)

Kenneth Hughes, Ph.D., Associate Professor of German (Adjunct)

Hartmut Kaiser, Ph.D., Associate Professor of German (Adjunct)

Michael K. Spingler, Ph.D., Associate Professor of French (Adjunct)

UNDERGRADUATE PROGRAM

Courses in theater arts—open to majors and nonmajors—are intended to provide theater students with a sound liberal arts education and to prepare them for graduate school or professional theater. Students should also consult the Theater Performance/Production Program for information about studio courses and productions.

The Theater Arts History and Criticism major consists of a minimum of 15 full courses as follows:

- 1) Required: T.A. 10; one course in acting (usually T.A. 12 or 13); one course in technical theater or design (usually T.A. 120); and Aesthetics 149.
- 2) At least eight additional courses in theater arts, dramatic literature, criticism, and aesthetics, usually selected from the courses listed directly below. Three of these courses may be theater arts performance courses.

- 3) At least three related courses such as art, film, music, English, philosophy, history, classics, comparative literature, and foreign languages and literatures.

In addition, a mastery of at least one foreign language is strongly recommended.

COURSES

10 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING

The class will study a small group of plays representing several styles, modes, and eras of Western drama, with special emphasis on formal analysis—study of the form and structure of each play. By means of class discussion, the oral interpretation of scenes from the plays, and the reading of critiques, which illustrate various critical approaches to the drama, the student will be encouraged to arrive at a personal evaluation of the plays. Extensive practice in critical and descriptive writing. This course satisfies the *verbal expression* skill in the Introductory Program. No prerequisite.

Mr. Schroeder

Offered every year

88 DIRECTED READINGS

Staff

89 SPECIAL PROJECTS

Staff

151 THEATER IN WESTERN CIVILIZATION

A survey of theater and drama from ancient Greece to the twentieth century. The course will consider the form and substance of theatrical presentations and the study of several representative plays from each important era and national theater. The first semester will cover the period from the Greeks to the Renaissance; the second semester will cover the period from the seventeenth century to the twentieth. No prerequisite.

Mr. Schroeder

Not offered on a regular basis

152 HISTORY OF THEATER ARCHITECTURE AND SCENE DESIGN

A survey of styles and techniques of design of theater buildings and scenery throughout the ages. Pictorial records and other materials documenting actual theaters and sets will be used extensively. Special emphasis will be given to the Greek, Roman, baroque, romantic, and modern periods. No prerequisite.

Mr. Schroeder

Not offered on a regular basis

154 MODERN DRAMA

A survey of Western drama and theater from Ibsen to the present. The first semester traces the development of modern realistic drama and early experimental reactions to realism. The second semester covers the period from World War II to the present and examines several of the major postwar movements and the radical dramatic forms they have produced. No prerequisite. Also listed for credit as English 129.

Mr. Schroeder

Offered every other year

155 ENGLISH DRAMA

A course in the major periods of English drama and theater before the twentieth century. The first semester covers the medieval theater and

the drama of Tudor, Jacobean, and Caroline England. The second semester covers the period from 1660 to the twentieth century. No prerequisite. Also listed for credit as English 155.

Mr. Schroeder

Offered every other year

One or more, but not necessarily all, of the following may also be offered during the 1982-83 and 1983-84 academic years.

164 THE AMERICAN MUSICAL THEATER

While some attention will be paid to the history of the musical theater in the United States, primary emphasis in this course will be on the study and analysis of several important contemporary musicals, their books, their lyrics, their music, and their productions, in an effort to determine form and structure, trends and innovations. Each student will be expected to study the book and lyrics for each show; in addition, each student will be expected to listen to tapes of the music for each show. These tapes will be on reserve in the Goddard Library. No prerequisite.

Mr. Schroeder

185 TENNESSEE WILLIAMS

An intensive study of the work of Tennessee Williams, concentrating on his development as an artist. Students will make an evaluation of his contribution to drama and literature through reading and analysis of his works. No prerequisite, but some experience in drama and literature is expected.

Mr. Schroeder

230 ELEMENTS OF DRAMA

Refer to course description under Comparative Literature 230.

Mr. Spingler

237 LANGUAGES OF THEATER

Refer to course description under Comparative Literature 237.

Mr. Spingler

286 SEMINAR: IBSEN

An intensive study of the major plays of Ibsen and criticism of his life and work. Consideration will be given to his development as an artist. Independent research and study is emphasized. Prerequisite: permission of instructor.

Mr. Schroeder

299.9 INTERNSHIP

Variable credit.

Staff

With permission of the program director, the following courses offered by other departments may be taken for Theater History and Criticism credit:

English 112 INTRODUCTION TO SHAKESPEARE

Refer to course description under English.

Ms. Carr

English 212 SHAKESPEARE

Refer to course description under English.

Ms. Carr

English 268 SEMINAR: EUGENE O'NEILL

Refer to course description under English.

Mr. Beard

French 255 THE MODERN FRENCH THEATER

Refer to course description under Foreign Languages and Literatures.

Mr. Spingler

German 127 DRAMATIC EXPRESSION IN GERMAN

Refer to course description under Foreign Languages and Literatures.

Mr. Hughes

German 138 MODERN GERMAN DRAMA

Refer to course description under Foreign Languages and Literatures.

Mr. Kaiser

**German 166 GERMAN DRAMA FROM LESSING TO
EXPRESSIONISM**

Refer to course description under Foreign Languages and Literatures.

Mr. Kaiser

STUDIO/PERFORMANCE MUSIC PERFORMANCE

PROGRAM FACULTY

Gerald R. Castonguay, Ph.D., Associate Professor of Music, Program
Director

Wesley M. Fuller, M.Mus., Associate Professor of Music

Relly Raffman, M.A., George N. and Selma U. Jeppson Professor of
Music

Susan F. Clickner, B.Mus., Lecturer in Voice

Rita LaPlante, M.L.A., Lecturer in Piano

Jacques L. Linder, M.Mus., Lecturer in Piano and Clarinet

Robert Manero, B.A., Lecturer in Violin, Director of Consortium Or-
chestra

Jill Maurer, M.Mus., Lecturer in Flute

Janet McGhee, M.Mus., Director of Choral Activities

Allan Mueller, B.S.G.S., Lecturer in Jazz Piano, Codirector of Jazz
Studies

Robert Paul Sullivan, Lecturer in Guitar

COURSES

Note: For information concerning major concentration in performance,
see History, Criticism and Theory of Music.

18 PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE

Areas offered include: piano, jazz piano, voice, clarinet, flute, classical
guitar, violin, and conducting. Lessons may be taken for credit or non-
credit. No credit is awarded to rank beginners until they have suc-

cessfully completed one semester of instruction. In all cases, credit is held in escrow until the following are completed: Music 120 or its equivalent, and one semester of weekly hour-long lessons or two semesters of weekly half-hour lessons. Credit is available for only one area of Music 18 instruction per semester. Beginners are welcome in all areas except jazz piano. Nonmajors and majors not concentrating in performance may receive one quarter credit per semester or one half credit per semester, depending on length of lesson. Majors accepted as concentrators in performance may receive one credit per semester during their junior and senior years. Maximum number of credits: nonmajors, three; majors not in performance concentration, four; majors in performance concentration, six. Whenever possible, students will be assisted in locating a qualified teacher in areas not currently offered. Special permission of the program director is required for credit for off-campus study. Credit is not awarded for off-campus study in areas offered at the University. Lesson fee (this is not included in tuition).
Staff
Offered every semester

130 JAZZ WORKSHOP

Includes ensemble performance practice with weekly rehearsals through the year. An audition is required. Credit is possible for those concurrently enrolled in or having previously passed 131. Maximum transcript credit allowed is one full course; offered as a half course.
Mr. Raffman and Mr. Mueller
Offered every semester

134 CHORAL MUSIC AND CONDUCTING

Styles of choral music from different periods will be studied with the aid of scores and recordings. Students will learn basic choral conducting techniques. Prerequisite: 121 or permission of instructor.
Staff
Not offered on a regular basis

148 SENIOR TUTORIAL FOR PERFORMANCE CONCENTRATION

Majors concentrating in performance will analyze historically and theoretically the music they will perform on their senior recital. A term paper is required.
Staff
Offered every semester

299.9 INTERNSHIP

Variable credit.
Staff

The following musical activities are open to all students, graduate and undergraduate alike. Auditions are held during the first week of Semester 1. Although no credit is awarded, the transcript of any undergraduate who completes the assigned performance requirements will include a listing of the particular activity for which he or she was registered.

107 CHAMBER MUSIC ENSEMBLES

The number of small ensembles is determined by the performing talent in a given year. Admission is by audition.
Staff
Offered every semester

117 CLARK CHAMBER CHORUS

This is a small, specialized singing group chosen by the conductor from the larger Clark Concert Choir. Admission is by audition.
Ms. McGhee
Offered every semester

127 CLARK CONCERT CHOIR

A chorus of 40 to 50 voices, the choir presents two major concerts each year on the Clark campus as well as off-campus appearances.

Ms. McGhee

Offered every semester

137 WORCESTER CONSORTIUM ORCHESTRA

Made up of students from various Consortium institutions and instrumentalists from the community, the orchestra presents two major concerts each year. Admission is by audition.

Mr. Manero

Offered every semester

STUDIO ART

PROGRAM FACULTY

Donald W. Krueger, M.F.A., Associate Professor of Art, Program Director

Marilyn JS Goodman, M.A.T., Lecturer, Associate Program Director

Sarah Buie, M.F.A., Assistant Professor, Graphic Design

Elli B. Crocker, M.F.A., Lecturer, Studio Art

Mary L. Graham, M.F.A., Lecturer, Studio Art

Michael Hachey, M.F.A., Lecturer, Studio Art

Leon Nigrosh, M.F.A., Lecturer, Studio Art

Ron Rosenstock, M.A., Lecturer, Studio Art

Jo Sandman, M.A.T., Lecturer, Studio Art

Jeffrey Schiff, M.F.A., Lecturer, Studio Art

Charles H. Slatkin, M.F.A., Lecturer, Studio Art

Al Souza, M.F.A., Lecturer, Studio Art

Ted Spagna, M.S., Lecturer, Studio Art

Staff

Courses in studio art and design offer opportunities for students to acquire resources for visual thinking and communication and to engage in personal creative expression. They provide education for the future professional artist or designer, offer studio experience for art majors, and serve as a valuable part of education in the humanities, the social sciences, or the natural sciences.

Courses are offered on the Clark campus and at the Worcester Art Museum. Foundation, area, and elective courses, and certain advanced courses, are available to nonmajors, special students, and students with combined or self-designed majors. Certain studio courses satisfy the Aesthetic Perspective of the Introductory Program. Internships in art studios, advertising agencies, communications and arts agencies, museums, and galleries are available.

Throughout the year, Little Center Gallery presents exhibitions of work by contemporary artists as well as Clark students. The Craft Studio offers opportunities for extra-curricular involvement in arts and crafts activities.

The Studio Art Major programs are designed to meet a number of student needs and interests: preprofessional preparation for graduate study and/or professional careers in art, design, art education, arts management, art therapy, and other art-related fields; the satisfaction of personal interest in art and design; and significant involvement in the creative process.

The Bachelor of Fine Arts degree program is for students with a strong interest in and commitment to art or design as a career. Admission to the program is selective, and students are expected to maintain a profes-

sional level in their studio work as well as a high academic average. A strong advising program assists students in curriculum planning, in identifying areas of major interest, and in preparation for graduate school or career. Areas of concentration include: drawing and painting, graphic design, illustration, photography, printmaking, sculpture, screen production, and ceramic design.

The B.F.A. includes:

- 4 Foundation studies courses
- 4-6 Courses from area and elective studios
- 4-6 Courses from major, senior, and elective studios
- 2 Senior studio courses
(to no more than 16 studio courses)
- 1 Senior thesis (non-credit)
- 16 Liberal arts courses, including two art history and two non-studio courses from the Department of Visual and Performing Arts

The Bachelor of Arts degree program is for students who see art as a part of liberal education or who may be undecided about professional interest and commitment. The B.A. program can accommodate interest in art education, art therapy, medical illustration, arts management, film and video, theater design, or individually-designed or double majors.

The B.A. includes:

- 2 Foundation studies courses
- 8-10 Courses from foundation, area, major, senior, and elective studios (to no more than 12 studio courses)
- 2 Art history courses
- 2 Non-studio courses from the Department of Visual and Performing Arts and Liberal arts courses to complete the 32-course degree requirement

The Diploma Program is for students who wish to concentrate in studio or who are uncertain of their interest in liberal arts. Under certain circumstances Diploma Program students may transfer to the B.F.A. program, or, following graduation, they may elect to continue their studies in the B.F.A. program or the Bachelor of Arts in Liberal Arts Degree Program in the College of Professional and Continuing Education.

The Diploma Program includes:

- 4 Foundation studies courses
- 17 Courses from area, major, senior, and elective studios
- 2 Senior studios
- 1 Art history course
- 1 Senior thesis (non-credit)
- Up to five liberal arts courses may be substituted for studio in the three-year sequence

All studio courses require work in addition to scheduled studio hours. Students should expect to spend at least twelve hours a week in work for each studio course.

Foundation Studies: First year courses, designed to provide a foundation in visual language and to develop the visual vocabulary and thought processes fundamental to future studio work. Required for B.F.A. and Diploma students; recommended for B.A. studio majors

and as an introduction to studio art and design for students from other disciplines. Open to nonmajors.

Area Studios: First- and second-year courses which provide an introduction to the various areas of studio specialization. Area studios are prerequisites for the more advanced major level studios. Open to nonmajors.

Major Studios: Second- and third-year advanced courses. These have prerequisites and are not usually open to nonmajors without evidence of appropriate preparation for advanced studio work.

Senior Studios: Third- and fourth-year advanced courses. Students work independently in their areas of specialization toward the development of a body of professional-level work or a graduate school portfolio.

Elective Studios: A variety of specialized enrichment courses, not all of which are offered regularly, including courses from other programs and departments, for which students may receive studio credit. Most elective studios are open to nonmajors.

NOTE: Most area, elective, major, and senior studio courses are offered only when students have completed the necessary prerequisites for taking them; therefore, unless otherwise indicated, they are not offered on a regular basis. Some, but not necessarily all, of these courses will be offered during the 1982-83 and 1983-84 academic years.

In certain individual situations, credit may be received for courses taken at the student's own expense at the Worcester Craft Center.

With the expansion of studio art facilities and programs, studio art courses, most of which were once designated 199, have been renumbered.

In addition to the prerequisites listed below, *all studio courses require permission of the instructor and/or program director.*

COURSES

89 SPECIAL PROJECTS

Variable credit.

Staff

100 VISUAL DESIGN I

(Foundation) An introduction to the nature of visual language and the creative process; a foundation for future studio work and/or original creative thought and action. Lectures, discussions, and studio problems in figure-ground, color relationships, and two-dimensional form and pattern. Formerly Art 170. Open to nonmajors.

Mr. Krueger, Staff

Offered every year

101 VISUAL DESIGN II

(Foundation) A continuation of 100 to include the study of depth and plastic illusion and basic three-dimensional structural principles and forms. 100 is not a prerequisite, but is recommended. Formerly Art 171. Open to nonmajors.

Mr. Krueger, Staff

Offered every year

102 VISUAL STUDIES I

(Foundation) An investigation, through graphic re-presentation, of contemporary concepts of drawing and basic concepts of space and the picture plane. Formerly Art 172. Open to nonmajors.

Mr. Krueger, Staff

Offered every year

103 VISUAL STUDIES II

(Foundation) A continuation of 102 through the use of drawing, collage, and elementary painting problems which emphasize contemporary attitudes and modes of visual thinking. 102 is not a prerequisite, but is recommended. Formerly Art 173. Open to nonmajors.

Mr. Krueger, Staff

Offered every year

120 PHOTOGRAPHY I

(Area) An introduction to the art and craft of black and white photography—the zone system, camera operation, developing, printing, and finishing techniques. Students must have a variable setting 35mm or $2\frac{1}{4} \times 2\frac{1}{4}$ camera with a built-in or hand-held exposure meter, tripod, and cable release, and must provide their own film and paper. Materials (lab) fee. Formerly Art 180. Open to nonmajors

Mr. Rosenstock

Offered every year

121 PHOTOGRAPHY II

(Area) A continuation of Photography I. Materials (lab) fee. Open to nonmajors. Prerequisite: Photography I.

Staff

124 GRAPHIC DESIGN I

(Area) An introduction to the process of solving communication problems through the synthesis of verbal and visual information. Discussion of design forms (book, poster, brochure, sign, map, exhibition) from historical and aesthetic viewpoints; introduction to selected media (typography, drawn and photographed images, color) through studio exercises and applied problems. Open to nonmajors.

Ms. Buie

Offered every year

125 GRAPHIC DESIGN II

(Area) A continuation of Graphic Design I may be taken independently. Graphic Design I is not a prerequisite.

Ms. Buie

128 DRAWING I

(Area) Required of B.F.A. and Diploma program students. Continues the study of drawing with emphasis on the nature of drawing as opposed to the representation of nature—an analytical approach using object, figure, landscape, and imaginative imagery. Open to nonmajors. Prerequisite: Visual Studies I and/or permission. May be repeated for additional credit.

Staff

Offered every year

129 DRAWING II

(Area) A continuation of Drawing I, stressing the understanding of drawing, space, and invention in both objective and non-objective form. Open to nonmajors. Prerequisite: Drawing I and/or permission. May be repeated for additional credit.

Staff

132 PAINTING I

(Area) An introductory painting course investigating material and subject possibilities and beginning a process of artistic experimentation and self-examination. Individual and group critiques, discussions, and experimentation with contemporary painting idioms. Open to nonmajors. Prerequisite: Visual Studies II and/or permission.

Staff

Offered every year

133 PAINTING II

(Area) A continuation of Painting I with increasing emphasis upon individual development and direction. Prerequisite: Visual Studies II and/or Painting I and/or permission.

Staff

136 SCULPTURE I

(Area) An introduction to the ideas and materials of three-dimensional form and an investigation of contemporary aspects of sculptural expression. Open to nonmajors. Prerequisite: Visual Design II and/or permission.

Mr. Schiff

Offered every year

137 SCULPTURE II

(Area) A continuation of Sculpture I leading to the development of personal direction and expression. Open to nonmajors. Prerequisite: Visual Design II and/or Sculpture I and/or permission.

Mr. Schiff

150 CERAMIC DESIGN I

(Elective) An exploration of three-dimensional form, texture, and color using basic clay-working methods, excluding wheel-throwing. Emphasis will be upon developing an awareness of sculptural form rather than utilitarian objects. Open to nonmajors. Prerequisite: Visual Design II or permission.

Mr. Nigrosh

Offered every year

151 CERAMIC DESIGN II

(Elective) A continuation of Ceramic Design I.

Mr. Nigrosh

154 CERAMIC DESIGN PROJECTS I

(Elective) Intermediate and advanced work in clay design in relation to individual technical and stylistic development. Emphasis will be on sculptural—including architectural—design rather than utilitarian function. Open to nonmajors. Prerequisite: Ceramic Design I and II and/or permission.

Mr. Nigrosh

155 CERAMIC DESIGN PROJECTS II

(Elective) A continuation of Ceramic Design Projects I.

Mr. Nigrosh

158 PRINTMAKING/INTAGLIO

(Elective) An introductory course in the technique and aesthetic of intaglio printmaking—etching, drypoint, aquatint, and engraving. Open

to nonmajors. Prerequisite: introductory drawing course(s) and/or permission.

Staff

159 PRINTMAKING/LITHOGRAPHY

(Elective) An introduction to the techniques and aesthetic of lithographic printing processes—black and white printing from metal lithographic plates. Open to nonmajors. Prerequisite: introductory drawing course(s) and intaglio printmaking and/or permission.

Staff

162 PRINTMAKING PROJECTS I

(Elective) Intermediate and advanced problem-solving in printmaking media—individual projects to be determined by student's interest and skills. Open to nonmajors. Prerequisite: Intaglio and/or lithographic printmaking and/or permission.

Staff

163 PRINTMAKING PROJECTS II

(Elective) A continuation of Printmaking Projects I.

Staff

166 SCREEN PRODUCTION/FILM

(Elective) An introductory workshop in Super-8mm film production. Students will be expected to complete a specific number of films of varied content. Open to nonmajors.

Mr. Spagna

167 SCREEN PRODUCTION/VIDEO

(Elective) An introductory workshop in elementary video production techniques and processes. Open to nonmajors.

Staff

170 SCREEN PRODUCTION PROJECTS I

(Elective) Intermediate and advanced individual and/or group work in film and/or video. Prerequisite: appropriate screen production courses and/or permission.

Staff

171 SCREEN PRODUCTION PROJECTS II

(Elective) A continuation of Screen Production Projects I.

Staff

174 CONTEMPORARY DIRECTIONS

(Elective) An intermediate/advanced level studio course, with discussions, emphasizing practical, experiential examinations through individual work of current movements, directions, styles, and attitudes in art and design. Students will work in media of their choice. Open to nonmajors. Prerequisite: appropriate introductory courses in the area(s) of student's interest, and permission. May be repeated for additional credit.

Mr. Krueger

176 ENVIRONMENTAL ART

(Elective) A conceptual and studio workshop concerned with art and design of an environmental scale—of public places as well as more

natural and primal settings. Through selected readings and exercises in memory, perception, and imagination, students will investigate poetic, social, and cultural attitudes related to art and environment and will, individually and collaboratively, produce works related to environment. Of interest to students in geography, environmental studies, psychology, art, etc. Open to nonmajors.
Mr. Hachey

178 ARCHITECTURE AND SPACES

(Elective) A studio course which focuses on structures in the natural and built environment. Problems related to the synthesis of cultural, creative, and environmental factors as well as sculptural interpretations. Open to nonmajors.
Mr. Schiff

182 BASIC TECHNICAL THEATER I

(Elective) Refer to description under Theater Arts 120.
Ms. Kurki

183 BASIC TECHNICAL THEATER II

(Elective) Refer to description under Theater Arts 122.
Ms. Kurki

184 DESIGN FOR THE THEATER

(Elective) Refer to description under Theater Arts 123.
Ms. Kurki

190 INTRODUCTION TO CARTOGRAPHY

(Elective) Refer to description under Geography 181.
Staff

200 PHOTOGRAPHY PROJECTS I

(Major) An intermediate level continuation of the study of the techniques and aesthetics of black and white photography. Students will have the opportunity to pursue individual photographic projects in the size and format of the student's choice. Materials (lab) fee. Open to nonmajors. Prerequisite: Basic Photography and/or permission.
Staff

201 PHOTOGRAPHY PROJECTS II

(Major) A continuation of Photography Projects I. Materials (lab) fee.
Staff

204 COLOR PHOTOGRAPHY/TRANSPARENCY

(Major) An intermediate/advanced workshop for students who have demonstrated competence in black and white photography, concentrating on the theory, practice, and aesthetic of color photography using color-positive materials. Students provide their own cameras, tripods, film, and paper. Open to nonmajors. Materials (lab) fee. Prerequisite: Photography I or the equivalent and/or permission.
Mr. Slatkin

205 COLOR PHOTOGRAPHY/NEGATIVE

(Major) An intermediate/advanced study of color photography using color-negative material. Students must have demonstrated competence

in black and white photography and provide their own cameras, tripods, film, and paper. Open to nonmajors. Materials (lab) fee. Prerequisite: Photography I or the equivalent and/or permission.

Mr. Slatkin

208 TYPOGRAPHY

(Major) Study of the typographic art through studio exercises and applied problems which deal with the organizational and the expressive natures of type. Prerequisite: Graphic Design I or II and permission.

Ms. Buie

Offered every year

212 GRAPHIC DESIGN/DRAWING

(Major) Development and refinement of drawing skills applicable to design solutions, and the integration of typographic elements and drawn images in applied problems. Prerequisite: Graphic Design I or II and/or permission.

Staff

Offered every year

213 GRAPHIC DESIGN/PHOTOGRAPHY

(Major) Development and refinement of photographic skills applicable to design solutions, and the integration of typographic elements and photographic images in applied problems. Prerequisite: Graphic Design I or II and/or permission.

Staff

Offered every year

218 DRAWING AND PAINTING PROJECTS I

(Major) A continuation of drawing and painting processes and concepts for the intermediate/advanced level student, with emphasis upon the search for individual direction and statement. Prerequisite: appropriate area level introductory drawing and painting courses and/or permission.

Staff

Offered every year

219 DRAWING AND PAINTING PROJECTS II

(Major) A continuation of Drawing and Painting Projects I.

Staff

224 DRAWING AND ILLUSTRATION PROJECTS I

(Major) A course for the intermediate/advanced level student focusing on the representational and illustrative aspects of drawing and painting, including an introduction to the concepts of contemporary professional illustration. Prerequisite: appropriate introductory drawing and painting courses and/or permission.

Staff

Offered every year

225 DRAWING AND ILLUSTRATION PROJECTS II

(Major) A continuation of Drawing and Illustration Projects I.

Staff

230 SCULPTURE PROJECTS I

(Major) A personal investigation of form and space in contemporary sculpture. Personal expression in three dimensions, focusing on individual perceptions and directions. Prerequisite: appropriate three-dimensional design and introductory sculpture courses and/or permission.

Mr. Schiff

231 SCULPTURE PROJECTS II

(Major) A continuation of Sculpture Projects I.

Mr. Schiff

234 STUDIO TOPICS

(Major) An advanced studio course for majors. Students from all studio disciplines will develop their work in response to thematic issues presented through readings and discussions. Themes will change with each semester offering and the course may be repeated for credit.

Staff

SENIOR STUDIOS

For the advanced student who will work independently with faculty supervision on the development of a body of professionally-oriented work. Prerequisite: appropriate intermediate and advanced courses and permission of instructor.

Staff

250 PHOTOGRAPHY STUDIO I

251 PHOTOGRAPHY STUDIO II

254 GRAPHIC DESIGN STUDIO I

255 GRAPHIC DESIGN STUDIO II

258 DRAWING AND PAINTING STUDIO I

259 DRAWING AND PAINTING STUDIO II

262 ILLUSTRATION STUDIO I

263 ILLUSTRATION STUDIO II

266 SCULPTURE STUDIO I

267 SCULPTURE STUDIO II

270 PRINTMAKING STUDIO I

271 PRINTMAKING STUDIO II

274 CERAMIC DESIGN STUDIO I

275 CERAMIC DESIGN STUDIO II

278 SCREEN PRODUCTION STUDIO I

279 SCREEN PRODUCTION STUDIO II

289 SENIOR THESIS

(Non-credit) Required of all B.F.A. and Diploma students for graduation: a body of pre-professional work presented to the faculty with oral and/or written support.

Staff

Offered every year

354 Visual and Performing Arts

299.9 INTERNSHIP

Variable credit.

Staff

THEATER ARTS

PERFORMANCE AND PRODUCTION

PROGRAM FACULTY

Raymond J. Munro, M.A.H., Assistant Professor of Theater, Program Director

Lauren J. Kurki, B.F.A., Technical Director of Theater

Wendy Biller, M.A.H., Lecturer in Dance (Affiliate)

Michael K. Spingler, Ph.D., Associate Professor of French (Adjunct)

UNDERGRADUATE PROGRAM

Courses in theater arts—open to majors and nonmajors—provide students with a sound liberal education and prepare them for graduate school or professional theater. Each year, the program presents professionally-directed productions of classic and contemporary theater; while any Clark student may audition, students who take theater arts courses are required, as part of their course work, to participate in these productions. There are also opportunities for students to act and direct in classes, workshops, and student-sponsored productions, and to audition for Clark Center for Contemporary Performance productions.

The Clark Center for Contemporary Performance is a scholarly community of directors, composers, playwrights, choreographers, film/video makers, and critics devoted to the creation, development, and publication of contemporary works of art as well as to theoretical reflection about the works and their performance. The range of such work includes new scripts, original compositions or scores, translations, transformation of poetry into performance pieces, and explorations of the intersection of music, dance and video in the performance of existing works.

The Center is designed to enhance the academic work of the University by organizing and focusing advanced learning through seminars and directed study in music, theater, film, design, literature, and aesthetics. Advanced students are encouraged to develop creative and theoretical projects within the Center, so that they may take full advantage of the critical evaluation and supervision available, and enrich their educational experience through contact with faculty, other students, and outside artists and performing groups.

The Theater Arts Major in Performance and Production:

1) Required:

- | | |
|----------|--|
| T.A. 10 | How Does a Play Work? |
| T.A. 12 | The Creative Actor,
or T.A. 13 Actor as Thinker
(one semester of each) |
| T.A. 120 | Basic Technical Theater I |

2) At least three full courses from the following:

- | | |
|-----------------|---------------------------------|
| T.A. 151a and b | Theater in Western Civilization |
| T.A. 154a and b | Modern Drama |
| T.A. 155a and b | English Drama |

3) At least four courses from the following:

- | | |
|----------|--|
| T.A. 11 | Voice and Diction
(required for actors and directors) |
| T.A. 12 | The Creative Actor |
| T.A. 13 | Actor as Thinker |
| T.A. 16 | Beginning Stage Movement |
| T.A. 19 | Directing Seminar |
| T.A. 113 | Studio (may be repeated) |
| T.A. 122 | Basic Technical Theater II |
| T.A. 123 | Design for the Theater (may be repeated) |
- 4) At least two more courses in theater arts, either from those listed above or others; *or* two courses in dramatic literature not taught in the Theater Arts Program.
- 5) At least three related courses such as aesthetics, art, film, music, English, philosophy, history, classics, comparative literature, and foreign languages and literatures.
- In addition, all students who are seriously interested in acting or directing should attempt to master at least one foreign language.

COURSES

10 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING

Refer to course description under Theater Arts History and Criticism.
Mr. Schroeder

11 VOICE AND DICTION

An intensified phonetic approach to articulation and voice production with some emphasis on speech for the stage and for public occasions. Each student will be required to master the International Phonetic Alphabet to the point where it is an effective tool for ear training and articulation. Several laboratory sessions will be provided for the student to record and listen to his/her voice and for individual coaching by the instructor. No prerequisite.

Mr. Schroeder

Not offered on a regular basis

12 THE CREATIVE ACTOR

Through a series of workshops, the student will become familiar with the basic tools necessary to the art of acting. The approach will be based on the techniques of Stanislavski, Viola Spolin, Joseph Chaikin, Robert Benedetti, and original exercises, including an introduction to basic voice and movement for the actor. No prerequisite. Limited to 25.

Mr. Munro

Offered every semester

13 ACTOR AS THINKER

A conceptual approach to acting theory and its application. Through a series of lectures and exercises, the student is led to a greater understanding of script analysis, characterization, style, and the relationship of the actor to his audience. This is a basic course for all students who intend to continue in acting and directing, and it is a prerequisite for the Studio and Directing Seminar courses. No prerequisite. Limited to 15.

Mr. Munro

Offered every semester

16 BEGINNING STAGE MOVEMENT

Students will study the basic principles of stage movement techniques and extension of the emotional range of the body. Prerequisite: permission.

Ms. Biller

Offered every year

17 ADVANCED MOVEMENT FOR THE THEATER

Students will receive further development of stage movement technique. They will do work in rhythm and dynamics through involvement in choreographed selections. Styles of movement will be studied. Prerequisite: permission.

Ms. Biller

Offered every year

19 DIRECTING SEMINAR

An introduction to the principles of directing for the stage through theory, practical application, and discussion. Students will study problems of interpretation and concept; the role of the director as creative and interpretive artist; relationship to designer, stage manager, and actors. Additional lab time is required. Prerequisites: 13 and permission of instructor.

Mr. Munro

Offered every year

88 DIRECTED READINGS

Staff

89 SPECIAL PROJECTS

Staff

113 STUDIO

A scene study course applying methods, theories, and approaches discussed in Actor as Thinker. Students will be required to present several scenes of different periods and styles for discussion, critical written review, and further development by classmates and director. The content will vary each time the course is taught and it may be repeated for credit. Lab and crew hours will be required. Prerequisite: 13.

Mr. Munro

Offered every year

120 BASIC TECHNICAL THEATER I

Introduction to theatrical production. Techniques and organization involved in providing the stage with scenery, lights, and properties. Drafting of these elements is introduced, as well as scaled ground plans and other stage data. Makeup, lighting, and set construction in applied lab/crew requirements.

Ms. Kurki

Offered every year

122 BASIC TECHNICAL THEATER II

Continuation of Theater Arts 120. Beginning elements of design and styles of production. Basics of perspective and methods of pictorial representation. Continued focus on specific elements of scenery, lighting, and properties in relation to theater facilities, materials, and equipment. Lab/crew assignments. Prerequisite: Theater Arts 120 or permission of instructor.

Ms. Kurki

Offered every year

123 DESIGN FOR THE THEATER

Theory of design/function of stage designer relating to production and to director. Historical research in styles of ornament and production.

Student may register with emphasis on scenery, lighting, properties or costume/makeup design. Drafting required. Painting and rendering introduced. Lab/crew assignments. May be repeated for credit. Prerequisite: Theater Arts 120 and 122.

Ms. Kurki

Offered every year

299.9 INTERNSHIP

Variable credit.

Staff

With permission of the program director, the following course offered by another department may be taken for Theater Arts Performance/Production credit.

French 165 FRENCH PLAY PRODUCTION

Refer to course description under Foreign Languages and Literatures.
Mr. Spingler

Women's Studies

PARTICIPATING FACULTY

Cynthia H. Enloe, Ph.D., Professor of Government

Serena S. Hilsinger, Ph.D., Professor of English

Ruth Harriet Jacobs, Ph.D., Professor of Sociology

Virginia Carr, Ph.D., Associate Professor of English

Rachel J. Falmagne, Ph.D., Associate Professor of Psychology

Dorothy Kaufmann-McCall, Ph.D., Associate Professor of French

Sharon P. Krefetz, Ph.D., Associate Professor of Government

Walter E. Wright, Ph.D., Associate Professor of Philosophy

Christina Hoff, Ph.D., Assistant Professor of Philosophy

Marilyn Jiménez, Ph.D., Assistant Professor of Spanish

Elizabeth A. Stanko, Ph.D., Assistant Professor of Sociology

Barbara P. Thomas, Ph.D., Assistant Professor and Deputy Director of
the Program for International Development

Andrea S. Walsh, Ph.D., Visiting Assistant Professor of Sociology

Robert Tovey, B.A., Instructor of English

Kristin Waters, Ph.D., Instructor of Philosophy

Linda Ammons, Ph.D., Visiting Lecturer of Social Anthropology

PROGRAM

Although Clark does not offer a major in Women's Studies, it recognizes the appropriateness of offering courses that reflect the concerns of women from the perspective of different disciplines. Each year, courses that speak to the social roles, biological theories, and cultural formulations of women's and men's positions in society are offered in a number of departments. Interested students are encouraged to design a "concentration" to supplement their traditional disciplinary based majors. The following sequence of courses is recommended for such a concentration: Introduction to Women's Studies, one advanced course, one seminar, and an internship in Women's Studies. Students also may self-design a major to include issues related to Women's Studies.

The following is a partial list of Clark's Women's Studies course offerings; more information can be obtained from participating faculty.

COURSES

INTRODUCTION TO WOMEN'S STUDIES

Refer to course description under Sociology 110.
Staff

COMPARATIVE POLITICS OF WOMEN

Refer to course description under Government 108.
Ms. Enloe

WOMEN IN HISPANIC LITERATURE

Refer to course description under Spanish 136.
Ms. Jimenez

FICTION BY WOMEN WRITERS

Refer to course description under English 115.
Ms. Hilsinger

MODERN FICTION BY WOMEN WRITERS

Refer to course description under English 116.
Ms. Hilsinger

WOMEN AND PHILOSOPHY

Refer to course description under Philosophy 139.
Ms. Waters

WOMEN IN THE MALE LITERARY IMAGINATION

Refer to course description under French 167.
Ms. Kaufmann-McCall

ADVANCED TOPICS IN WOMEN AND PHILOSOPHY

Refer to course description under Philosophy 297.
Ms. Waters

WOMEN OF THE ENGLISH RENAISSANCE

Refer to course description under English.
Ms. Carr

WOMEN WRITERS

Refer to course description under French 171.
Ms. Kaufmann-McCall

FRENCH AND AMERICAN FEMINISM

Refer to course description under French 220.
Ms. Kaufmann-McCall

WOMEN AND POLITICS

Refer to course description under Government 175.
Ms. Krefetz

SOCIOLOGY OF WOMEN'S WORK

Refer to course description under Sociology 209.
Ms. Jacobs

WOMEN AND CRIME

Refer to course description under Sociology 210.

Ms. Stanko

SOCIOLOGY OF SEX ROLES

Refer to course description under Sociology 225.

Staff

EROS AND FEMINISM

Refer to course description under Comparative Literature 226.

Ms. Kaufmann-McCall

SEMINAR: VIRGINIA WOOLF

Refer to course description under English 226.

Ms. Hilsinger

IMAGES OF WOMEN IN FILM

Refer to course description under Sociology 249.

Ms. Stanko, Mr. Hodgkinson

THE FAMILY

Refer to course description under Sociology 255.

Staff

SEMINAR: WOMEN AND MILITARIZATION

Refer to course description under Government 261.

Ms. Enloe

SEMINAR: JANE AUSTEN

Refer to description under English 228.

Ms. Tovey

WOMEN IN SOCIETY

Refer to description under Psychology 236.

Ms. Falmagne

Faculty

Members of the faculty and officers (appointed for the 1982–83 academic year as of July 1, 1982) are listed alphabetically with their titles, degrees, and years at Clark.

PRESIDENT

MORTIMER H. APPLEY, Ph.D., President of the University, Professor of Psychology. B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950; D.Sc., York University, 1975. (1974–)

EMERITI

KARL O.E. ANDERSON, Ph.D., Professor of English, Emeritus. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945–76)

KARL J.R. ARNDT, Ph.D., Professor of German, Emeritus. (1950–1974)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages, Emeritus. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953–)

TILTON M. BARRON, B.L.S., Librarian Emeritus. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Science, 1940. (1954–1978)

ROBERT F. CAMPBELL, Ph.D., Professor of American History, Emeritus. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946–1957; 1960–)

PAUL S. CLARKSON, J.D., Curator Emeritus. (1969–1979)

LYDIA P. COOK, B.S., Registrar, Emeritus. (1932–1966)

JESSIE C. CUNNINGHAM, Ph.D., Associate Professor of English, Emeritus. (1957–1975)

TAMARA DEMBO, Ph.D., Professor of Psychology, Emeritus. (1953–1972)

GEORGE E. HARGEST, M.B.A., Associate Professor of Economics, Emeritus. (1942–1971)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1946–1973)

HOWARD B. JEFFERSON, Ph.D., LL.D., L.H.D., Litt. D., President, Emeritus. A.B., Denison University, 1923; Ph.D., Yale University, 1929; LL.D., Denison University, 1948, Hillsdale College, 1952, Northwestern University, 1958; L.H.D., Colgate University, 1951, Assumption College, 1956; Litt. D., College of the Holy Cross, 1962; L.H.D. Clark University, 1967; LL.D., Emerson College, 1968; Litt. D., Anna Maria College, 1972. (1946–1967)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology, Emeritus. (1947–1970)

J. FANNIN KING, M.A., Associate Professor of Romance Languages, Emeritus. Adviser to International Students. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946–)

DWIGHT E. LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927–1967)

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946–1968)

J. RICHARD REID, Ph.D., Professor of Romance Languages, Emeritus. (1944–1976)

PERCY M. ROOPE, Ph.D., Professor of Physics, Emeritus. (1921–1962)

FACULTY AND OFFICERS OF INSTRUCTION

VERNON AHMADJIAN, Ph.D., Professor of Botany, Department of Biology Chair. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959–1968; 1969–)

- RONY AHARON, A.B.D., Instructor in Economics. A.B., Clark University, 1973. (1982-)
- MARILYN S. ALBERT, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Rochester University, 1963; M.A., McGill University, 1964; Ph.D., McGill University, 1979. (1978-)
- MARTIN ALBERT, M.D., Ph.D., Associate Professor of Psychology (Affiliate). M.D., Tufts Medical School, 1963; Ph.D., University of Paris, 1971. (1980-)
- MICHAEL P. ALEXANDER, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Rice University, 1968; M.D., Stanford University, 1972. (1977-)
- HARRY C. ALLEN JR., Ph.D., Professor of Chemistry, Associate Provost and Dean of Research. B.S., Northeastern University, 1948; Sc.M., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-)
- ROY S. ANDERSEN, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)
- ALBERT A. ANDERSON, Ph.D., Associate Professor of Philosophy, Department of Visual and Performing Arts Chair; Adjunct Professor of Comparative Literature. B.A., Morningside College, 1960; M.A., Boston University, 1963; Ph.D., 1971. (1973-)
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Academic Calendar

1984-85

FALL SEMESTER

Wednesday, August 22
Orientation for New Students

Monday, August 27
Registration for undergraduate and graduate students

Tuesday, August 28
First day of classes* (University Monday)

Monday, September 3
Labor Day—no classes

Tuesday, September 4
Classes resume

Friday, October 19
Mid-term break begins after last class

Wednesday, October 24
Classes resume

Monday-Friday, November 5-16
Spring pre-registration for all continuing undergraduates

Tuesday, November 20
Thanksgiving vacation begins after last class

Monday, November 26
Classes resume

Tuesday, December 11
Last day of classes

Wednesday and Thursday, December 12, 13
Saturday and Sunday, December 15, 16 Reading days

Friday, December 14

Monday-Thursday, December 17-20 Fall Examinations

Thursday, December 20
Winter Vacation begins after last examination

* University Monday: Students and faculty follow Monday class schedule.

SPRING SEMESTER

Wednesday, January 2
All fall semester grades due at the Registrar's Office

Monday, January 14
Registration for preregistered and all other undergraduates and all graduate students

Tuesday, January 15
First day of classes

Monday-Friday, February 25-March 8
Senior clearance for undergraduates to be awarded degrees

5/19/85

Friday, March 8

Spring vacation begins after last class

Monday, March 18

Classes resume

Monday-Friday, April 1-12

Fall preregistration for all continuing students

Monday, April 15

Last day for graduate theses/dissertations to be handed in for degrees to be awarded 5/19/85

Monday, April 29

Last day of classes

Tuesday and Wednesday, April 30, May 1

Saturday and Sunday, May 4, 5

Reading days

Thursday and Friday, May 2, 3

Monday-Wednesday, May 6-8

Spring examinations

Thursday, May 9

All grades for graduating seniors due at the Registrar's Office

Sunday, May 19

Commencement

Monday, May 20

Spring grades for all continuing students due at the Registrar's Office

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About Clark University

A teaching and research institution originally founded in 1887, Clark is the oldest graduate institution in New England and the second oldest in the nation. The undergraduate college, which opened in 1902, has been heavily influenced from the start by the academic values and rigor of the Graduate School. The rich heritage of that scholarship is the foundation on which today's scholars, teachers, and students are building.

Clark was established chiefly through the efforts of two men: founder Jonas Gilman Clark, the sagacious Worcester-area native and merchant for whom the University is named, and G. Stanley Hall, the prominent psychologist who served as Clark's first president and helped build the University's faculty and reputation. Jonas Clark envisioned a college for New England young men with limited financial resources. G. Stanley Hall saw the need in the United States for institutions whose sole concern would be graduate study and research. Today, nearly a century after its founding, Clark shows the influence of both men's visions for the institution.

A private, coeducational, liberal arts university with Graduate Schools and a College of Professional and Continuing Education, Clark continues to offer the intellectual resources of a respected graduate University within the context of a small, New England college. In the course of its history, the University has extended its influence through professional journals—including *Economic Geography*—and professional societies, including the American Psychological Association and the American Physical Society, both founded at Clark. Many internationally known scholars have worked, taught, and lectured at Clark. The names—and accomplishments—of some of these scholar/teachers are well known beyond the world of academe: Sigmund Freud, whose only visit to the United States was for a series of Clark lectures; Robert H. Goddard, whose liquid-fueled rockets made him "father of the space age"; Hudson Hoagland and Gregory Pincus, two of those credited with research that led to the development of the birth control pill.

Other Clark affiliates who became renowned for pioneering work in their specific fields include: Albert A. Michelson, the first American Nobel laureate in science; Franz Boas, the major influence on American cultural anthropology; George Hubbard Blakeslee, a pioneer in the field of international relations. The wide-ranging accomplishments of Clark's scholars and students have helped the University to leave its mark on the face of the earth (explorer Paul Siple, who held a Clark Ph.D. in geography, named a moun-

tain range in the Antarctic for his professors) and on the face of the moon (where a crater is named after Dr. Goddard).

The Robert Hutchings Goddard Library, with a research collection of 500,000 volumes including 60,000 microform volumes and with its recently enlarged computer center housing Clark's VAX 11/780, is at the academic and physical heart of the University. In addition, Clark's newer facilities include fully equipped microcomputer labs and the Arthur M. Sackler Sciences Center, an eight-million-dollar teaching and research complex, which opened in September, 1984. Large and small campus facilities—some recently remodeled—are used for theater, music, and dance, as well as art exhibitions. A new student activities center offers facilities for virtually every sport and has a competition-size swimming pool. Campus buildings range from modern dormitories to Victorian era academic and administrative buildings.

Clark features small classes and seminars; close relationships among students, faculty, and administrators; exceptionally strong interaction between graduate and undergraduate programs; and unusual opportunities for independent study. Intimate seminar and laboratory settings, student participation in faculty research projects, and a dedicated, inquisitive, intellectual environment encourage Clark students to hold fast to the University's tradition of academic excellence.

The Undergraduate College

The role of Clark University in undergraduate education is that of a small college dedicated to advanced learning within the context of a university. The University's emphasis upon intellectual and scholarly achievement and the extensive resources of its nationally recognized Graduate School provide unique advantages for the college and its students.

An undergraduate education at Clark should have three elements: First, it should provide students with deep and extensive involvement with a specific field of study so that they can experience the meaning of intellectual mastery and can analyze problems in sufficient detail to know the real complexity of things; second, it should develop the broad appreciation of our heritage, and that of other cultures, that is necessary to the liberally educated person; and third, it should assist students in developing intellectual skills that suit them for a productive and active life.

To accomplish these goals, Clark has adopted the university-college concept as the ideal toward which all undergraduate academic planning and program development should be directed. The university-college concept seeks to integrate graduate and undergraduate education, developing in students intellectual competence, personal maturity, and skills in analysis, communication, and critical thinking. Programs are structured so that students assume increasing responsibility for their own learning, often culminating in research projects with senior faculty.

The foundation of the university-college is the Program in Liberal Studies, a structured set of courses designed to: supplement introductory-level work in the incoming student's proposed field, acquaint the student with skills in critical thinking and knowing that are essential for self-directed learning, provide a framework within which a student can select an organized pattern of study during the first two years, and provide a broad introduction to liberal and lifelong learning. The Program in Liberal Studies has two components: critical thinking courses and perspectives courses.

I. *Critical Thinking*: Every course in the University involves work in critical thinking. However, two types of courses place special emphasis on the cultivation of skills in this area. Each student is required to take two courses, one from each of these areas:

A. *Verbal expression*: Courses offered in many different disciplines that place special emphasis on the relationship between writing and critical thinking as practiced in the context of that discipline.

B. *Formal analysis*: Courses offered in several departments that place special emphasis on logical and algebraic modes of thinking.

II. *Perspectives*: Perspectives courses are designed to encourage breadth and to define the principal ways of knowing in various fields of learning. Students must work in at least five of the six categories and in courses representing five different academic departments.

1. *Aesthetic*: Predominantly courses from the departments of art (history or studio), English, music, screen studies, and theater arts, *aesthetic perspective* courses encompass all aspects of the imagination and study the perception, expression, analysis, and evaluation of form.

2. *Comparative*: Predominantly courses offered in the departments of business/management, economics, geography, government and international relations, psychology, and sociology, *comparative perspective* courses introduce the methodologies and modes of thinking encompassed by the social sciences.

3. *Historical*: Predominantly found in the Department of History and in literature programs, *historical perspective* courses build the capacity to understand the contemporary world in the larger framework of tradition and history. Courses are broad in scope, covering at least two centuries, and holistic rather than thematic in approach. Courses introduce students to methods of history and to the ways historians think critically about the past, present, and future.

4. *Foreign Language/Foreign Culture*: Predominantly offered by the Department of Foreign Languages and Literatures, *language perspective* courses acquaint students with a second cultural system through its performance in language.

5. *Natural Scientific*: Predominantly found in the programs of biochemistry, biology, chemistry, physics, and environment, technology and society, *scientific perspective* courses teach the principal methods and results of the systematic study of the natural world. Courses focus on methods of scientific study (observational/experimental experiences of natural phenomena) with a laboratory or demonstration component as an integral part to ensure actual exposure to natural phenomena and student experience of the result of scientific study.

6. *Values*: Predominantly offered by the Department of Philosophy and in literature programs, *values perspective* courses study the dimension of value in all domains of life and learning, asking the moral question, "What ought we to do?"

Each perspective is important in the development of a balanced view. Therefore, we recommend that students do course work in each of the areas as part of a balanced liberal arts program. A list of the courses in each perspective is available during registration.

A major at Clark involves study in one of the various departmental or interdepartmental programs of the college and results in the bachelor of arts degree. The undergraduate major is a program of study anchored in a particular discipline but specifically structured to include courses in related disciplines. This concept recognizes that breadth of knowledge must be maintained and achieved concurrently with specialization. Particular attention is placed on the interrelation of the major programs within the University and on early research opportunities.

A major consists of from 12 to 19 courses taken from those designated by the department. No department may require a student to take more than 19 courses in the major, but a student may take more than 19 courses if he/she meets the other requirements for graduation.

Academic Programs

Traditional majors are offered in ancient civilization, art (art history, studio arts, or fine arts), biology, chemistry, economics, English, foreign languages (French, German, Spanish, romance languages, or a self-designed combination), geography, government and international relations, history, mathematics, music, philosophy, physics, psychology, sociology, screen studies, and theater arts. Interdisciplinary majors are offered in biochemistry, business/management, comparative literature, computer science, international development and social change, and environment, technology and society. Formal concentrations are offered in American studies, communications, education, Judaic studies, and women's studies; in addition, courses are offered in anthropology, astronomy, classics, geology, linguistics, and Russian, but departmental majors for bachelor degree candidates are not available in these fields. Detailed descriptions of all majors and programs can be found under the departmental listings.

Any student can design his/her own major focusing on a body of knowledge not within the bounds of existing majors or departments. With the advice of an advisory committee of three faculty members, the student establishes a major program, which must be approved by the Undergraduate Academic Board. Student designed majors must include a balance between upper and lower division courses and be approved no later than the start of the second semester, junior year.

INTERDISCIPLINARY DEPARTMENTAL MAJORS

BIOCHEMISTRY

The biochemistry major at Clark provides a comprehensive foundation in all areas of this contemporary discipline. A small, selective program, it serves students with basic interests in health-related sciences. Those who are attracted to biomedical laboratory technology or medical school will find this program and its strong instrumental and biophysical emphasis valuable. For more information, refer to the departmental listing.

BUSINESS/MANAGEMENT

Two options are available to undergraduates interested in a business/management program:

- 1) *The Business Management Major.* Students interested in a management career in a profit or nonprofit organization (business, government, education, healthcare delivery systems, religious institutions, etc.), are urged to major in a liberal arts discipline and to supplement their major with a core of management courses. Some students may choose to major in management;

however, a broad education drawing on the disciplines of the arts and sciences is preferred and is consistently recommended by faculty in the School of Management and by the academic administration.

2) *The Five-Year B.A./M.B.A. Program.* For students who plan to pursue a master in business administration after their undergraduate work, this program offers an opportunity for accelerated graduate study. A select group of students is permitted to enroll in graduate management courses during their senior year, thereby enabling them to complete the M.B.A. in one year beyond the undergraduate degree, rather than the usual two years. Five-year B.A./M.B.A. students do their B.A. work in a field other than business/management (e.g., economics, psychology, government) and take related courses or electives to prepare them for graduate work in the senior year. They receive their B.A. after the senior year and the M.B.A. after the fifth year. For more information, refer to the management listing.

In addition to these programs, the Graduate School of Management offers a Master of Business Administration Program and a Master of Health Administration Program, which is offered in conjunction with the Department of Family and Community Medicine of the University of Massachusetts Medical School. Students may enroll in either program on a part- or full-time basis. For more information, refer to the management listing.

COMPARATIVE LITERATURE

This major allows the student of literature to transcend the boundaries of any one national literature, period, or genre. Comparative literature students are encouraged to combine such areas as philosophy, visual and performing arts, psychology, and history with their specific interests in language and literature. For more information, refer to the departmental listing.

COMPUTER SCIENCE

The computer science major at Clark is designed for the education of computer scientists with special skills in programming, software, and systems design. The basic goal of the major is to produce a sophisticated user of the computer who is able to apply his/her expertise in other areas. For more information, refer to the listing for the Department of Mathematics and Computer Science.

INTERNATIONAL DEVELOPMENT AND SOCIAL CHANGE

The Program for International Development and Social Change focuses on questions of equity, growth, and development at a time when Third World countries are exerting increasing influence in the world's economic, political, and social systems. Intended to serve students from the developing world and the United States, the program provides a forum for diverse perspectives. Its hallmark: a unique combination of academic training

and field research. Not only do students become aware of broad issues in international development, but they are trained in the basic skills of resource management and social and economic analysis. Many prepare for careers as planners, managers, and educators in public and private organizations that deal with the world's developing nations; others choose further study in graduate and professional schools. For more information, refer to the departmental listing.

ENVIRONMENT, TECHNOLOGY AND SOCIETY

Clark is one of a few universities in the country to offer an undergraduate major in the interdisciplinary field of environment, technology and society. The Environment, Technology and Society (ETS) Program is designed for students who hope to contribute to the solution of complex societal problems such as environmental protection, energy policy, technological hazards, and risk analysis. Degree requirements emphasize a firm grounding in natural science coupled with considerable exposure to social science and public policy perspectives, both derived from coursework in traditional departments.

The ETS Program offers some thirty problem-oriented and methodological courses as well as a variety of special projects and internship experiences, often in conjunction with ongoing faculty research. ETS courses and projects serve not only ETS majors but also a variety of other students who diversify their studies by taking ETS courses as electives. The program also offers an integrated B.A./M.A. degree, which can be pursued by ETS majors and majors in traditional disciplines. For more information on the ETS major and related master's degree programs refer to the departmental listing.

INTEGRATED UNDERGRADUATE-GRADUATE PROGRAMS

To help bridge undergraduate and graduate education, Clark has established several integrated programs that allow students to complete requirements for bachelor's and master's degrees at an accelerated pace. Because undergraduates are granted admission to these special programs before receiving their undergraduate degree, they can begin to fulfill advanced degree requirements during their junior and senior years.

Each bachelor's/master's degree program is career oriented and spans several disciplines; each provides participants with the knowledge and skills needed for entry-level professional positions, and normally covers a three-year span, beginning in the junior year and leading directly to a master's degree. The bachelor's degree is awarded en route to the master's. The programs provide students with the knowledge and skills to enter a profession directly or to continue in a Ph.D. program elsewhere, emphasizing interdisciplinary education based on a common core of coursework and opportunity for individual professional inter-

ests. *Formal application for admission to these programs is required, usually after the sophomore year.* Transfer students interested in making application to these programs should direct inquiries to the Admissions Office.

The University has approved programs of this type in environment, technology and society; international development and social change; management; and public administration. In addition, the Department of Geography offers a five-year B.A./M.A. program and a seven-year B.A./Ph.D. program open to a limited number of highly qualified students.

SPECIAL OPPORTUNITIES FOR STUDY

THE EXTENDED UNIVERSITY

Since Clark is a member of the Worcester Consortium for Higher Education, students may enroll for one course each semester at Anna Maria College, Assumption College, the College of the Holy Cross, Worcester Polytechnic Institute, Worcester State College, University of Massachusetts Medical School, or Becker, Quinsigamond, and Central New England Colleges.

Over four thousand students have cross-registered under the consortium arrangement since 1968. Through the "extended University" Clark students immediately have available to them increased programs and course options. All of this is available at no extra charge to students.

Students from Holy Cross, Worcester Polytechnic Institute, and Clark University have worked together on a water pollution project; consortium students have been involved in a lead-paint testing program; engineering students from Worcester Polytechnic Institute, University of Massachusetts Medical School, and Quinsigamond Community College have worked with Clark students as a research unit for the Worcester Department of Public Health to conduct an infectious disease study. A health studies option, which arranges student internships in health care organizations and internships with research scientists in laboratory settings, is available through the "extended University" as defined by the Worcester Consortium. A music option also is available to stimulate intercollegiate participation in performing groups, to encourage cross-registration in music courses, and to make available concentrated study for students with extensive music backgrounds. Courses taken at consortium institutions should not duplicate those taught at Clark. Approval of the department chair or, when necessary, the dean of the college is required. Students enrolled in the day college may not enroll independently at other consortium institutions and receive Clark credit. To help students select cross-registration courses, the Consortium Office compiles a master course list by subject. This list appears prior to registration and is available in the Registrar's Office.

CONSORTIUM GERONTOLOGY STUDIES PROGRAM

The Worcester Gerontology Studies Program functions as part of the Worcester Consortium for Higher Education. This program aims at developing an interest among undergraduate students of the consortium in the field of gerontology. It tries to stimulate the development of new courses in the field of aging—and to generate a greater emphasis on the problems of aging in general courses—to improve and enrich the available curriculum relating to gerontology. The main elements of the program are courses, internships, career planning, and a gerontology certificate.

A variety of courses related to aging are available among consortium colleges and exemplify the multidisciplinary nature of gerontology as a field of study. Contacts with a variety of agencies in the community have been developed in order to place and supervise students in internships with the elderly. To enhance support and supervision of the internship experience, the program organizes internship seminars and workshops. These address common issues and concerns of student interns and enable students to learn from their peers.

Placements for internships can be in a variety of settings: nursing homes, day care centers, family service associations, home care corporations, neighborhood centers, councils on aging, retirement programs, health services, and hospitals. Roles can be as varied as counseling, visiting, occupational and physical therapy, legislative assistance, advocacy, administration, and others.

For further information about the Gerontology Studies Program, contact: Donnelle I. Eargle, Coordinator, Consortium Gerontology Studies Program, UMass Medical School, Campus Center on Aging, Worcester, Massachusetts 01605 (617) 856-3084 or, at Clark, contact Andrea Walsh, Assistant Professor, Department of Sociology, 793-7230.

RESERVE OFFICERS' TRAINING CORPS (ROTC)

Clark University students may participate in and receive benefits of the four- or two-year Air Force Reserve Officers' Training Corps (AFROTC) programs conducted at the College of the Holy Cross where the AFROTC offices are located. The AFROTC programs, which are voluntary and open to all students, lead to a commission as a second lieutenant in the U.S. Air Force.

The academic program consists of a one-hour, noncredit general military course each semester of the first year, and a one-hour, noncredit general military course each semester of the second year, and a three-hour, four-credit professional officer course each semester of the third and fourth years. In the first two years, courses cover Air Force organization and history. Courses in the final two years cover management, leadership, American defense policy, and military law. Each student is also provided with field training, which is completed during the summer between the second and third years. Students attending field training receive

travel pay and are paid while in attendance at summer camp at the rate of one-half of the base pay of a second lieutenant with less than two years of service. Students who participated in the last two years of AFROTC must attend field training for only six weeks; students who have participated during the first two years of AFROTC attend for four weeks. Students not already receiving an AFROTC scholarship may compete for scholarships that range in duration from two to three-and-a-half years. Scholarships cover all tuition costs, fees, and all expenses for books used in courses in which the student is enrolled. In addition, a monthly tax-free subsistence allowance of \$100 is paid to all scholarship students, and to all students in their last two years of AFROTC. The basic qualifications for enrollment in the AFROTC Program require a student to be a citizen of the United States, of good moral character, and of sound physical condition. Full tuition scholarships are available for students who qualify. Students interested in AFROTC should write to the Professor of Aerospace Studies, AFROTC Detachment No. 340, College of the Holy Cross, Worcester, Massachusetts 01610 or call (617) 793-3343.

WRITING AT CLARK

Emphasizing the need for writing throughout the curriculum, Clark offers interdisciplinary, departmental, and special Writing Center programs. The required Verbal Expression Program offers courses in several disciplines, including art, English, geography, history, linguistics, philosophy, screen studies, and environment, technology and society. In many of these courses, class work is supplemented by peer writing groups. In addition to the required Verbal Expression Program, departments such as English, history, and biology offer courses in basic, intermediate, and advanced expository writing as well as in science, social science, and creative writing. Supplementing the curriculum, Clark's Writing Center provides individual tutoring and non-credit workshops for all interested students. Writing Center offerings are not limited to remedial work, but are flexibly designed to help students at all levels achieve clear, correct, graceful writing.

DIRECTED READINGS AND SPECIAL PROJECTS COURSES

Most departments offer directed readings or special project courses, which may be entered with the permission of the instructor concerned. Directed Readings courses comprise a sequence of structured readings on a given topic approved and directly supervised by the instructor. Special Projects courses involve independent research by the student on a particular problem, as in laboratory work or field study. Both types of courses are offered for variable course credit but not to exceed a full course except by petition to the College Board. Students may take up to two full course credits in Directed Readings, Special Proj-

ects, or some combination of the two in a given one-semester period. There is no limit on the total number of such courses that may be counted toward the B.A. degree.

NONTRADITIONAL EXPERIENCES

Academic experiences outside the normal curriculum (e.g. internship experiences, off-campus research, study at nonaccredited institutions) are eligible for course credit. To qualify, an experience must involve a significant extension, embodiment, or illustration of previous or concurrent systematic academic work. It must take place under competent supervision, and the learning involved must be formally evaluated by a Clark faculty member. The goals and structure of the experience must be agreed to by the instructor and the student *prior* to the beginning of the experience. Course credit will not be given for work that duplicates previous coursework or other prior educational experiences.

INTERNSHIPS

The Clark University Internship Program offers qualified students the opportunity to spend a semester working off campus, full- or part-time, as an extension of the academic curriculum. Having undertaken sufficient coursework in a related discipline, the student may choose—from a large number of agencies offering internship placements—a position that will allow him/her to perform extended work in that discipline while testing areas of potential career interest. Academic credit is offered for internships that take place under the supervision of qualified agency sponsors and in conjunction with appropriate Clark faculty members. Internships are equivalent to undergraduate courses, and tuition is assessed on a per-credit basis. All internships must be approved by the Internship Office.

JOB LOCATION AND DEVELOPMENT

The Job Location and Development Program, a federally- subsidized facet of the College Work-Study Program, is a referral service designed to assist students looking for part-time and summer employment. The office, located on the third floor of 18 Downing Street, maintains a listing of jobs available in the greater Worcester area. Interested students are registered, screened, and referred for the consideration of participating employers. Although the service operates under the auspices of the Financial Aid Office, it is available to all currently enrolled Clark students, regardless of financial need.

INTERNATIONAL PROGRAMS

Clark University is committed to encouraging a stronger Clark presence abroad and a stronger international presence at Clark. The International Programs Office manages both areas.

Clark-sponsored Junior Year Abroad Programs are presently

available on a competitive basis to qualified students who wish to study at: the University of Dijon, Dijon, France; Trier University, Trier, Germany; Programas Americanos in Segovia, Spain; and at ITESO in Guadalajara, Mexico. Clark also has an internship program in London (either semester), an internship program with the West German Federal Parliament (either semester), and an internship program with the French National Assembly (either semester). Students who study abroad on a Clark program pay regular tuition and fees to Clark. Clark assumes responsibility for the students' academic programs and normal living expenses for the academic year, sometimes including airfare.

Clark University has exchange relationships—for students and faculty—with Trier and Dijon and expects to create new opportunities with other universities in the future.

Up to four units of credit may be earned during a semester abroad and up to eight units during a full year. The International Programs Office also provides services for international students at Clark. These services include visa information, advising, and hosting of social events. For further information contact the Office of International Programs located at 18 Beaver Street, (617) 752-4606.

WASHINGTON STUDIES PROGRAM

Clark participates in the Washington Semester Program of the American University in Washington, D.C. and the Washington Center for Learning Alternatives Internship Program.

Under the program, a small number of superior students may be nominated to attend the program, usually in the junior year, studying United States government in the nation's capital. Although any student may be interested in the program, the opportunity should be particularly attractive to students majoring in government and international relations, history, economics, or sociology. Inquiry and application should be made to the chair of the Department of Government and International Relations for the Washington Semester Program and to the director of the Internship Office for the Washington Center for Learning Alternatives Internship.

DIPLOMA PROGRAM IN STUDIO ART

In 1981, Clark University's Department of Visual and Performing Arts incorporated the eighty-three-year-old professional school of the Worcester Art Museum, expanding studio art faculty and facilities and increasing studio art program offerings. The department now offers, in addition to B.A. and B.F.A. degree programs, a diploma program in studio art. For details, refer to the program descriptions listed under Studio Art, Department of Visual and Performing Arts.

PREPROFESSIONAL PROGRAMS

Clark University recognizes that there is no fundamental incompatibility separating liberal arts education and professional preparation. In that spirit Clark offers a bachelor of fine arts degree, work in management, computer training, and courses in education, all within a liberal arts context. In addition, Clark has identified concentrations preparatory to careers in law and medicine.

Students interested in law school are advised to plan a broadly based academic program that is liberal in character and has adequate samplings drawn from the natural and physical sciences, social sciences, and humanities. Although there is no specific major or constellation of courses recommended for all prelaw students, it is important that the courses selected lead toward the development of certain skills: (1) *Communication and articulation skills*: courses in composition and creative writing as well as courses in history, philosophy, government, and other fields in which the ability to read and write well is stressed; (2) *Quantitative analysis and graphic presentation*: courses in mathematics, computer science, economics, and geography, which help develop the ability to compile, understand, and interpret data and to present and analyze it in graphical form; (3) *Logic*: the study of law requires the systematic analysis of propositions and of the conclusions that can be drawn from them; all courses that provide training in this skill are highly desirable; (4) *Critical understanding*: courses in ethics (philosophy), history, sociology, and other social sciences that promote understanding of human institutions and values are recommended.

In general, the records of students applying to law schools will be evaluated according to several criteria: (1) the overall quality of grades, (2) the breadth and distribution of courses, and (3) evidence of advanced learning and scholarship.

Students who are interested in prelaw are urged to consult the members of the Prelaw Advisory Board and the prelaw *Handbook*, available in the Office of Career Planning and Placement.

Students interested in premedical or predental programs may major in any of the sciences, social sciences, or humanities, but must complete—normally before the end of the junior year—at least the minimum requirements for admission to medical and dental schools: one year each of introductory chemistry, biology, physics, and organic chemistry (all with laboratories), and one year of both English and calculus. A semester of psychology is also strongly recommended or required by most medical and dental schools. Although there is considerable variation, some medical or dental schools encourage students to take courses in quantitative analysis, physical chemistry, and advanced biology. Proficiency in quantitative reasoning, communication skills, and reading comprehension must also be developed, and a broad liberal arts background is helpful toward that end. In selecting

their courses and planning their programs, students are urged to consult members of the Premedical and Predental Advisory Committee and the *Guide for Students Planning to Enter Medical or Dental School* compiled by the committee. Copies of the *Guide* and other materials pertaining to premedical, predental, and other health-profession education are available in the Office of Career Planning and Placement.

Requirements for a Bachelor's Degree

GENERAL REQUIREMENTS

Course requirements: Credit toward the bachelor of arts degree is expressed in terms of courses. A one-semester course normally involves two 75-minute or three 50-minute class meetings per week and three to four hours of laboratory per week, when applicable. Normally each semester course is equivalent to one unit (four semester hours). Thirty-two units plus satisfactory completion of institutional and major requirements are necessary for the bachelor's degree.

Minimal academic performance: To graduate with the B.A. degree, a student must receive passing grades in the 32 full courses required for graduation; he/she must receive a C- or better in at least 24 of these courses. Equivalencies for students with fewer than 32 courses in residence will be established by the College Board.

For the purpose of transfer, a full course is equivalent to four semester-hours credit.

RESIDENCE

To earn a bachelor's degree at Clark a student must earn at least one half the total number of course units for the degree and at least one half the total number of course units taken for fulfillment of a major as *residential* credit. Residential credit is defined as credit earned through courses taught in the college. External credit is credit earned in the following categories:

1. Advanced placement and transition programs.
2. Summer school credit taken after matriculation at Clark. Such credit is applicable to a Clark degree only when *approved in advance and in writing by the registrar*. Approval is generally restricted to making up course deficiencies or pursuing unique educational opportunities.
3. Credits transferred from other American colleges and universities.

4. Credit earned in foreign study programs administered by American or foreign institutions of higher learning other than Clark.
5. Cooperative Programs (e.g., Washington Semester, Dijon, Guadalajara, Quebec, Bonn, or Trier).

The amount of (external) credit that can be applied to a bachelor's degree at Clark is limited by category.

1. No more than one semester (4 units) may be granted in advanced placement (A.P.) A.P. credit is defined as 2 units of degree credit assigned for a score of 4 or 5 on a CEEB A.P. examination.
2. No more than three semesters (12 units) of other external credits may be awarded to already matriculated students. No more than one of these three semesters (4 units) may be taken in summer courses.
3. Eight of the last sixteen units must be completed at Clark or in a Clark-sponsored program.

DECLARATION OF THE MAJOR

A student must declare his/her major no later than the end of the second semester, sophomore year. Changes in major after this point are possible but may prolong the undergraduate experience. During the freshman year, students are encouraged to seek faculty advice and give careful attention to their future program of study.

ACADEMIC REGULATIONS

The undergraduate normally carries a full program of four courses per semester. Students should consult with faculty or with major departments when questions about course or program selection arise.

Freshmen and sophomores may choose any course designated by the department as open to them. Freshmen and sophomores are admitted to 200-level courses only with permission of the instructor and the department chair concerned, to whom the student must present evidence of high class standing and/or adequate preparation.

Juniors and seniors may elect any 100- or 200-level course; course selection by juniors and seniors is subject to conditions stated in course descriptions.

Undergraduates may be admitted to 300-level courses (courses primarily for graduate students) with the approval of the dean of the Graduate School.

RESERVE CREDIT

Full-time undergraduate students who are in good standing (that is, not on academic warning or probation) and who are in at least their second consecutive semester may enroll for an extra

course, designated as a "reserve credit" course, for no additional charge. Reserve credit courses are in addition to the normal 8-course-per-year load, normally cannot apply toward a major, and do not meet residency requirements. (A full-time program, in combination with a reserve course, may not exceed 5 units in any one semester). These courses are primarily for enrichment.

Reserve credit courses may also be used to make up credit deficiencies as follows:

- 1) One reserve course may be used to round-off a fractional transfer award to the nearest whole number (e.g. 2.50 transfer credit, plus one reserve course would become 3.00, *not* 3.50).
- 2) One to four reserve credits may be used to make up course deficiencies accrued at Clark as a result of no records and withdrawals. Deficiencies are judged on the basis of a student's cumulative record after seven semesters of full-time study or the equivalent.
- 3) No more than four reserve credits may be applied toward a degree.
- 4) Ordinarily, transcript evaluation and the application of reserve credit occur only during the senior clearance.
- 5) Reserve courses must be letter graded and apply toward grade point averages.
- 6) Courses chosen for reserve credit must be regular day college courses. Excluded are all independent study, continuing education, and consortium courses.

GRADES

Grades are an indication of individual performance in each course taken in the college. At Clark three grading patterns are currently in use:

1. *Standard letter grades with no record of unsatisfactory work:* This pattern uses the symbols A, B, C, D, and NR with the modifying symbols "+" and "-" for A, B, and C. The lowest passing grade is D. Grades of D- are converted to NR (No Record).
2. *The Pass/No Record Option:* This pattern uses the symbols, P, NR. P indicates work at a level of C- or better.
3. *The Credit/No Record Option:* This pattern uses the symbols CR/NR. CR indicates work at a level of C- or better.

Option three (credit/no record) applies to a course as a whole and is invoked by an instructor or department with the approval of the Undergraduate Board. This option is invoked for courses in which traditional grading schemes are judged to be inappropriate to the subject matter or method of instruction. Reports on the work of each student are made out at the end of each course. All courses in which a student receives NR do not appear on the students permanent record.

The faculty has approved the following qualitative description of grades:

A indicates work of distinction, of exceptionally high quality

- B indicates good work, but not of distinction
- C indicates satisfactory work
- D indicates marginal work
- NR indicates unacceptable work

REGISTRATION AND PREREGISTRATION

Every student registers for courses at the beginning of each semester. Notification of the dates for registration is given, and failure to register within the announced period results in a late fee. All continuing undergraduate students are also expected to preregister in November for the spring semester, and again in April for the following fall semester. Details are provided in the preregistration class schedule each semester.

INCOMPLETES

A record of incomplete may be permitted by approval of the College Board or dean of the college only when sickness or some other unavoidable circumstance prevents completion of the course. *Individual instructors may not assign incompletes without the approval of the College Board.* A record of incomplete incurred in the first semester must be made up no later than the following April 1; if incurred in the second semester, it must be made up no later than the following October 1. *If a course is not completed within the specified time, the record of incomplete is changed to NR.*

EXAMINATIONS

Final examinations are given at the end of many courses. Approximately one week is set aside for each examination period, and an attempt is made to distribute examinations for individual students evenly throughout this period. Absence from a final examination, except for the most compelling reasons, may result in an NR in the course. Final exams (take-homes) are not to be given (or to be due) during the last week of class or the scheduled reading period. Other examinations and tests may be given at any time during the course at the convenience of the instructor.

CLASS ATTENDANCE

The University has no class attendance requirements; however, instructors have the prerogative of establishing such requirements for their own courses.

ELECTION OF THE PASS OPTION

The availability of the "pass" option (P) in virtually all courses is designed to help minimize the competitive aspects of grading for those who find competition detrimental to learning. Some students may wish to elect a number of their courses on this basis.

All students should remember that the great majority of graduate and professional schools have expressed a preference for graded tran-

scripts and encourage applicants to have many graded courses. Preprofessional students and those for whom graduate school is a goal should exercise caution in employing the "pass" option. Students who are interested in attaining honors, such as Phi Beta Kappa and general course honors at graduation, also should exercise the option cautiously.

RESTRICTION OF OPTION

A department may, with the approval of the Undergraduate Academic Board, restrict the grading option for its majors in the major program.

NONCREDIT AUDIT STATUS

Full-time degree students are eligible to register as auditors in any course with the permission of the instructor. There is no additional charge for this privilege. Part-time matriculated students also may register as auditors with the permission of the instructor and the payment of \$350 per course during the academic year 1984-85. In limited or sectioned courses, regularly enrolled Clark students are given preference for available openings.

Matriculated students who successfully complete audited courses (this determination is made by the instructor) will have the audited courses posted on their permanent records.

Note: Records for nonmatriculating auditors are kept for only the semester in attendance. Transcripts are not issued for audited courses.

WITHDRAWAL FROM COURSES

A student may withdraw from any course at any time during the first four weeks of classes (regardless of the grade thus far attained in that course) providing that, after withdrawal, he/she is carrying no fewer than three courses. Withdrawal from a course after the fourth week of classes constitutes withdrawal from an enrolled course and does not permit the student to substitute his/her enrollment pattern as explained in "Normal Program and Course Variance (page 22). Withdrawal from courses during the last two weeks of classes requires the permission of the College Board.

COURSE CHANGES

A student may enter a course without special permission (unless such permission is required) any time up to the end of the first week of classes. After the first week, a student may enter a course with the permission of the instructor up to four weeks after the beginning of classes in a semester-length course. Thereafter, a student may enter a course only with the permission of the instructor and the College Board.

CLASSIFICATION OF STUDENTS

All students who have not been required to withdraw at the end of the academic year will be promoted if they have satisfactorily completed the following number of courses.

To the sophomore class	6 courses
To the junior class	14 courses
To the senior class	22 courses

PARTIAL PROGRAMS

In special circumstances, students may be permitted by the deans of students to register for a semester program of less than three courses. These students are designated as part-time students.

GUEST AND SPECIAL STUDENTS

The University provides for guest students from other colleges and universities who want to study at Clark for one or two semesters and for special students who want to take only a few courses without enrolling as degree candidates. Students enrolled as guest students should contact the Admissions Office. Persons interested in special student status should contact the registrar.

DISMISSAL

A student whose accumulated courses at the end of one semester are fewer than three (or fewer than two and one half in the case of a freshman) will be reminded by the dean that she or he is in jeopardy of being required to withdraw. The student may be required to withdraw from the college if he or she fails to complete successfully five courses during freshman year and six courses each year thereafter. Students who are required to withdraw ordinarily will not be eligible for an Alumni and Friends Scholarship for the first semester of their return to the University. Students who meet demonstrated need and federal eligibility requirements may apply for available loan and job funds. The Financial Aid Office will reinstate scholarship funds after successful completion of one semester.

PROBATION

Students who do not maintain academic good standing or who violate academic integrity may be placed on academic probation by the College Board. Students on academic probation are ineligible for reserve course registration, and their progress is subject to regular review by the College Board.

ACADEMIC INTEGRITY

Academic integrity is a basic value for all higher learning. Simply expressed, it requires that work presented must be wholly one's own and that all direct quotations must be identified by source. Academic integrity can be violated in many ways: for

example, by submitting someone else's paper as one's own, cheating on an exam, copying a computer program, altering data in an experiment, or quoting published material without proper citation of references or sources.

To ensure academic integrity and safeguard students' rights, all suspected violations of academic integrity should be reported to the College Board. Such reports should be carefully documented, and students accused of the infraction notified of the charge. In the case of proven academic dishonesty, the student may be required to withdraw from the University.

LEAVES OF ABSENCE

A student who is in good standing may apply to the dean of students for a leave of absence, after which he/she may return to the University without formal application for readmission.

Honors and Awards

DEPARTMENTAL HONORS

A student may elect a program leading to a bachelor's degree with honors in a particular subject at the beginning of the junior year and, in some cases, at the beginning of the senior year. Under the plan, the department appoints an honors adviser who assists the student in planning a unified program of courses for the junior and/or senior years. The program may include a maximum of six courses in which the student works with a large measure of independence under the supervision of the adviser. In the senior year, the student must pass a comprehensive examination given by the department.

Students may apply in writing to their major departments for permission to take honors work, not later than May 1 of the sophomore year or, in some departments, in the junior year. Department approval is necessary for admission to such work.

Admission to an honors program does not exempt the student from any of the standing regulations. A student's candidacy for honors will be terminated at the end of any semester in which he/she has not maintained a standard satisfactory to the department in which the honors work is being done.

The department may recommend the student's graduation with honors, high honors, or highest honors; such recommendation occurs at the conclusion of the honors program.

ANNUAL HONORS

In June of each year, the College Board publishes a list of students who have distinguished themselves by outstanding academic performance in the preceding year. Honors are awarded to the top students in each class based on annual grade average.

COURSE HONORS

General course honors are awarded at three levels: *cum laude*, *magna cum laude*, and *summa cum laude*. Honors are determined by the College Board on the basis of eight semesters' work or its equivalent. Criteria, such as grades, percentage of courses taken on P/NR and graded basis, and number of courses at Clark, are used for determining the awarding of general honors. Ordinarily three quarters of a student's record at Clark must be graded if he/she is to be eligible for general honors.

PHI BETA KAPPA

The Society of Phi Beta Kappa, founded at the College of William and Mary in 1776, is dedicated to the recognition and encouragement of outstanding scholarly achievement in liberal studies. The Clark Chapter, Lambda of Massachusetts, was established in 1953. Each year, a limited number of juniors and seniors are elected to membership on the basis of distinction in programs that are clearly liberal in character, with due consideration of evidence, both formal and informal, of high scholarship and creativity.

Tuition and Other Charges

SUMMARY OF TUITION AND OTHER CHARGES
FIRST AND SECOND SEMESTERS
ACADEMIC YEAR 1984-1985

Tuition		\$8,400
Art Museum Tuition	4,400	
Health Services Fee		90
Room:		1,350
Dormitory double room	1,350	
Dormitory single room	1,900	
University house double room	1,350	
University house single room	1,900	
Board (19 meals \$1,470, 10 meals \$1,250, 5 meals \$930)		1,470
Student Activity Fee		130
		<hr/>
SUB-TOTAL for continuing students:		\$11,440
Charges that apply to new students only:		
Contingency Deposit		\$ 30
Orientation Fee		80
		<hr/>
TOTAL		\$11,550

OTHER FEES

Medical and Accident Insurance (optional)	\$177 single*
Application Fee (undergraduate)	30
Transcript (No charge for the first one, \$1 per transcript for requests made in senior year)	2

DEPOSITS

Admission Deposit	\$100
Tuition Deposit (upperclassmen)	200
Dormitory Deposit	100

Note: Costs are subject to change from year to year.

* \$350 student/spouse; \$550 student/spouse/children

GENERAL INFORMATION

Tuition, board, dormitory charges, and certain fees are due and payable prior to the beginning of each semester. The dates for 1984-85 are: August 15, 1984 for Semester 1 and December 15, 1984 for Semester 2. Students are not permitted to register for any semester until all financial obligations have been arranged satisfactorily with the University.

There is a *late fee* of \$25 assessed against all accounts not paid in full by the August and December due dates. In addition, *interest* at the rate of 1-1/2 percent per month (annual rate 18 percent) will be charged on all balances (including tuition deposit) 30 days or more past due.

REFUND POLICY

Withdrawals are arranged in the Dean of Students' Office. A student who officially withdraws in writing during the first week of any semester is allowed a refund of 80 percent on tuition; during the second week, 60 percent; during the third week, 40 percent; during the fourth week, 20 percent; after the fourth week there is no refund. The activities fee is refunded by the same formula. There is no refund on other charges, except board, when a student withdraws from the University.

When a student has left, but not withdrawn from, the University on the advice of a doctor within the first four weeks of a semester, and a decision is made later that the student must withdraw, tuition refund is made retroactive to the date of the doctor's recommendation, based on the schedule described above.

NORMAL PROGRAM AND COURSE LOAD VARIANCE

A normal full-time academic program is eight course units per year (four course units per semester). Students may elect to vary this pattern by taking three, four, or five course units during the fall or spring semester, and the remaining course units in the

other semester. This option is available only during the full academic year (September through May), when the combined year program will equal eight units. One half year tuition will be billed for any pattern of three, four, or five courses.

Seniors in their last semester are expected to take the necessary number of units (up to five) for their degree. Seniors in their last semester will be billed on a per-course basis at the rate of 1/8 of the normal year's tuition per course. Full-time freshmen or transfer students, in their first semester at Clark University, must enroll in a four-course program. Students re-entering the University, or returning from leaves of absence, also must enroll in a four-course program during their first semester.

ORIENTATION FEE

A fee of \$80 is assessed to all new students to cover services and activities provided during orientation.

CONTINGENCY DEPOSIT

All undergraduates are required to pay \$30 deposit to cover minor charges, such as property damage, which may be incurred during the year. Students are billed each year for whatever charges are incurred; the balance is refunded upon completion of studies.

DORMITORY DEPOSIT

A dormitory deposit of \$100 is required of upperclassmen each spring to reserve a place in a dormitory. It is credited toward dormitory charges, but may be withheld to cover damage costs. The deposit is forfeited if the student does not enroll for the specified semester.

APPLICATION FEE

A fee of \$30 must accompany the application for admission to the college. It is *not refundable*.

STUDENT ACTIVITY FEE

A fee of \$65 per semester, levied and administered by the Student Council, is required of all matriculated undergraduates. It pays for admission to and participation in a wide range of cultural and recreational activities.

ADMISSION DEPOSIT

For entering students planning to live on campus, a non-refundable admission deposit of \$100 *and* a housing deposit of \$100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the \$100 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark. De-

posits are *forfeited* if the student does not enroll for the specified semester.

TUITION DEPOSIT

A deposit of \$200 is required of all students planning to return to the University for their sophomore, junior, or senior years. It is payable by July 1 and is credited toward charges for the fall semester; \$100 of the deposit is forfeited if the student does not enroll for the specified semester.

IDENTIFICATION CARD

Identification cards are issued each year to all students without charge. This card is an official college identification and should be carried at all times. Loss should be reported immediately to the Campus Police. There is a \$5 replacement charge for lost I.D.s.

KEYS AND KEY SECURITY

Room keys, mailbox keys, and dormitory entry cards are issued to students upon their arrival at Clark. Fees are charged for the replacement of keys and cards that are lost during the year, and it is mandatory to return them before leaving campus at the end of the academic year. The following charges are assessed to students who fail to return their keys within 30 days after the close of school: \$30 for the room key, \$5 for the mailbox key.

CLARK UNIVERSITY TUITION BUDGET PLAN

The University offers a budget plan designed for families who find it more satisfactory to budget college costs from monthly income as opposed to the traditional twice yearly payment system. Under this plan, annual college charges are divided into 10 consecutive monthly payments. The initial payment is due in April and the final payment will be due in January of the following year. The only fee for participation in this plan is \$25. This fee includes the cost of automatic life insurance coverage guaranteeing payment of the balance of the budgeted amount to Clark University in the event of the death of the insured parent. This program is administered for Clark University by Consumers Bank in Worcester, Massachusetts. Information regarding this plan is mailed to all students who are offered admission to the University.

Student Services

ORIENTATION

All new students are expected to attend the orientation program at the opening of their first semester. This program helps

students plan a course of study and familiarizes them with the Clark and Worcester communities. Although the emphasis is on academic advising and placement, orientation also facilitates personal and social adjustment.

ADVISING

The faculty, administration, and staff are regularly available to all Clark students for appropriate advising. Questions are resolved by individual conferences and sometimes through group meetings. After the freshman year, students may choose (and change) faculty advisers; these advisers assume primary responsibility for the academic guidance of declared majors.

Freshmen are assigned individual advisers their first year. They also have access to the faculty who work in the orientation program, and who are familiar with the Program in Liberal Studies. Freshmen are encouraged to take a variety of courses and to discuss their programs of study with professors teaching their classes and with their freshman advisers.

HOUSING

Clark University provides housing for approximately 1,300 students in ten houses and seven dormitories, both coeducational and single sex. Freshmen, unless they are commuting from home for classes, are expected to live in University housing and can choose between accommodations where residents are all freshmen or where they are members of all four classes. Housing is available for a limited number of transfer students.

Upperclass students generally have first choice in selecting particular housing spaces; one traditionally popular option for continuing students is to live off campus in privately owned apartments. Approximately one third of Clark students live in private housing in the immediate neighborhood.

Rooms for new students are assigned during the summer and mailed to home addresses. Rooms for continuing students are determined in the spring of the school year by a lottery system; when the demand for University rooms exceeds the available supply, this system determines who receives immediate eligibility and who receives waiting status. The lottery numbers also determine the order in which students come to choose their particular room. Usually all continuing students requesting University housing receive it, though some receive room assignments later in the summer. Requests for University housing, when honored, are considered binding for the full academic year as long as the student is registered.

In the past several years, there has been an increasing student demand for Clark accommodations, and the University is studying options to expand housing opportunities and to address the changing needs of the student body in a sensitive and personal manner.

DINING HALLS AND MEALS

Dining halls in Dana Commons and Jefferson Hall are operated for the convenience of the Clark community and guests. Service is cafeteria style, and students select from a variety of plans with respect to both the number of weekly meals and particular dietary needs, such as kosher or vegetarian. "The Locker Room"—a casual gathering place for food, drink, socializing, and entertainment—includes snack and juice bars, game and TV rooms, and a rathskellar.

HEALTH SERVICE

The Clark University Health Service is a primary care outpatient clinic that provides on-campus health care to matriculated (day college) students. It is staffed by family practice physicians from the Hahnemann Family Health Center, nurse practitioners, and a registered nurse. The clinic, located on the first floor of Wright Hall at 30 Downing Street, is open Monday through Friday 9 a.m.-5 p.m. There is always a physician on call when the Health Service is closed.

Students may make an appointment at the Health Service—with either a physician or a nurse practitioner—for diagnosis, treatment, follow-up, or counseling regarding health problems. Gynecological and contraceptive services are available.

The Health Service staff has a holistic approach to health problems. Emphasis is placed on prevention, wellness, and health education. Staff members consider their roles to be congruent with, and an integral part of, the educational process.

Before registering for courses, all students are required to demonstrate adequate medical insurance coverage, through either a family policy or the Clark University Student Health Insurance Plan.

PSYCHOLOGICAL SERVICES

The Clark University Psychological Services Center offers psychodiagnostic, psychotherapeutic, and referral services to members of the Clark community. Administratively the center is part of the Department of Psychology and is a training agency for graduate students in clinical psychology. A significant portion of the center's work is done by graduate students under supervision of several faculty-staff members who are clinical psychologists. A brochure describing the center and its services may be obtained at the center's main offices in Room 301 of Jonas Clark Hall.

OFFICE OF CAREER PLANNING AND PLACEMENT

The Office of Career Planning and Placement is a resource to which students are encouraged to turn for individual assistance in working through the relationships between undergraduate study, personal values and goals, and postcommencement options.

Students and alumni of the University may use the services of the Office of Career Planning and Placement: (1) a library of graduate and professional school catalogs and a variety of directories and program listings available to students in their search for desired fields of graduate/ professional study; (2) extensive information about career possibilities of interest to Clark students, extending from traditional fields of endeavor to new, developing, and nontraditional career areas; (3) strong support for students in their senior "job-search" process, including resume workshops, a library of directories listing potential employers in many fields, a recommendation mailing service, and a campus recruiting program; and (4) professional help in these specific services by means of informal conversation, interest surveys, and counseling.

Athletics and Recreation

Athletic programs are designed to stimulate and encourage students to wider participation in physical activities, promote health and mental efficiency, and lead to continuing participation throughout life. Participation is voluntary.

STUDENT ACTIVITIES CENTER

Clark has a modern student activities center, which houses all male and female athletic and recreational programs. The center has a central gymnasium with three full-size basketball courts, three volleyball courts, three tennis courts, eight badminton courts, a jogging track, and a setup for gymnastics. There is 6-lane, 25-yard pool with 1- and 3-meter diving boards. There are four handball/ paddle racquet courts, two squash courts, and areas designated for weight training, voluntary physical education, exercising, crew, and dance.

INTERCOLLEGIATE ATHLETICS

For students with a reasonably high level of skill and a well-defined and strong interest in athletic competition, intercollegiate schedules are arranged for men in soccer, golf, baseball; for men and women (separately) in basketball, crew, cross-country, tennis, swimming, and track; for women in volleyball, field hockey, and softball. Additional intercollegiate competition may be arranged as student interest warrants.

Clark University is a member of the National Collegiate Athletic Association, the Eastern College Athletic Conference, the New England College Athletic Conference, and numerous sports associations. Clark is an N.C.A.A. Division III school and typically

competes with the following Division III, Division II, and Division I schools: Amherst, Williams, Brandeis, Tufts, M.I.T., Bates, Bowdoin, Colby, Middlebury, Coast Guard, Assumption, Holy Cross, W.P.I., Springfield, Yale.

INTRAMURAL ATHLETICS

The opportunity to gain some of the benefits of participation in competitive athletics is offered to all students through organized intramural competition in touch football, basketball, volleyball, tennis, table tennis, racquetball, softball, soccer, and squash.

VOLUNTARY PHYSICAL EDUCATION PROGRAM

Individual and group no-credit classes are offered each semester in ballet, jazzercise, body awareness, folk dancing, jazz and modern dance, yoga, karate, instructional racquetball, squash, tennis, judo, weight training and conditioning, and fencing.

COEDUCATIONAL RECREATIONAL ATHLETICS

Students may participate in coeducational and recreational leisure-time activities including archery, badminton, basketball, fencing, golf, guitar, horseback riding, sailing, swimming, tennis, softball, volleyball, and in several dance activities, including folk, square, and modern dance. The same activities are available to men's and women's groups. (Off-campus arrangements must be made for golf, sailing, and horseback riding.)

CLUB SPORTS

Various organizations have evolved in order to allow students to continue participating in an activity in which they have a strong interest. The clubs that are jointly funded by the Department of Athletics and the Student Council currently include: ice hockey, lacrosse, women's soccer, men's volleyball, bowling, skiing, outing, horseback riding, power weight lifting, sailing, bando-karate, squash, and racquetball.

Admission

FRESHMAN ADMISSION

Clark University welcomes applications for admission from men and women without regard to race, color, religion, age, national origin, financial condition, or presence of any handicap. Selection is competitive and based primarily on academic promise as indicated by secondary school performance, recommendations, and Scholastic Aptitude Test scores. Secondly, decisions reflect consideration of the individual experience and particular circumstances unique to each candidate.

ENTRANCE REQUIREMENTS

In general, the completion of a minimum of 16 acceptable units of credit in a four-year secondary school program or its equivalent is required for admission to the freshman class. Such preparation typically includes four years of English; two or more years of foreign language study; two or more years of mathematics (three or more for those planning a science or mathematics major); at least one year each of social studies and natural science (more laboratory work for those planning a science major); and other credit electives, including the arts, recognized in the secondary school curriculum.

ADMISSION TESTS

Applicants for freshman admission in September should submit the results of the Scholastic Aptitude Test (SAT) administered by the College Entrance Examination Board no later than January. One Achievement Test is required: the English Composition Examination (preferably with essay).

REGULAR ADMISSION

Candidates for freshman admission in September should initiate their applications as early as possible, usually during the first semester of the final year of secondary school, and no later than February 15. The deadline for admission at midyear is December 1. A nonrefundable fee of \$30 must accompany each undergraduate application unless a waiver is being requested. Clark participates in the Common Application Program and accepts photocopies of the appropriate forms, which are distributed to secondary schools.

EARLY ADMISSION

Exceptional students are invited to apply for early admission when encouraged and supported by enthusiastic recommendations from their secondary schools.

EARLY DECISION

As a service to students for whom Clark is clearly first choice, Clark has established an Early Decision Program. Applications in writing for an early decision may be submitted anytime until January 15. Notification is on a rolling basis and decisions are announced within 30 days of receipt of a completed application. Candidates will be offered admission or deferred for further consideration with regular applicants. Although this program does not preclude regular applications to other colleges, participation by a student does imply a commitment to withdraw such applications upon notice of acceptance by Clark.

INTERNATIONAL ADMISSIONS

Foreign students attending secondary schools *within* the United States may use the standard application forms, but it may also be necessary to submit an international application. The Test of English as a Foreign Language (TOEFL) is required of all candidates whose native or official language is not English. TOEFL results for successful applicants are usually in the 550-650 range. For information, write to TOEFL, Box 899, Princeton, NJ, 08540. Those attending secondary school in the United States for less than two years need *not* submit results from the Scholastic Aptitude Test (SAT) but these students *must* submit TOEFL scores if their native language is not English. Financial aid for foreign students is limited and is based on completion of a financial aid application. Those at secondary schools in the United States under a student visa will need another visa for university study. *The Certificate of Eligibility (I-20)*, necessary to obtain a student visa, will be granted only after full admission and a receipt of a *Certification of Finances* signed by a bank official.

NOTIFICATION OF ADMISSION AND DEPOSITS

Regular notification of admissions decisions for September freshmen occurs on or about April 1, and Clark subscribes to the Candidates' Reply Date, May 1. For students planning to live on campus, a nonrefundable admission deposit of \$100 and a housing deposit of \$100 are required to indicate acceptance of an offer of undergraduate admission. For students planning to live off campus, only the \$100 admission deposit is required. Deposits are credited toward charges for the first semester in attendance at Clark.

DEFERRED ADMISSION

Students who want to postpone enrollment need only submit a request in writing by the assigned reply deadline. Students who undertake academic work in the interim may not automatically defer enrollment, but must reactivate their applications by submitting official transcripts for review.

ADVANCED PLACEMENT/STANDING

Placement in advanced courses is determined by individual performance on departmental examinations, which may be oral or written, or on the Advanced Placement and Achievement Tests of the College Entrance Examination Board. Each score of 4 or 5 on an AP Test, for example, will be credited with a value of two course-units at Clark. Advanced standing may also be earned by transfer; presentation of an official transcript of college-level course work already completed is required. A maximum of one semester's credit (4 units) may be assigned to freshmen enrolling with advanced standing.

TRANSFER CREDIT

Normally, credit is given for academic courses in the liberal arts previously taken at accredited colleges and universities and for Advanced Placement Test results as described above. Credit for courses at nonaccredited institutions is granted on a provisional basis to be evaluated upon successful completion of two semesters of full-time work at Clark. No credit is given for any course completed with a grade lower than C-minus.

Evaluation of credits for college courses completed elsewhere is made on request, at the time of admission or upon receipt of final transcripts, and is used in planning a course program and in provisional classification as a freshman, sophomore, or junior. A maximum of 50 percent of both the Clark B.A. degree and the departmental major requirements may be accepted in transfer, and normally a minimum of two academic years at Clark is necessary for completion of degree requirements. Matriculated students should refer to the section on residency requirements.

TRANSFER APPLICANTS

Clark welcomes applications for admission with advanced standing from students attending two- and four- year institutions. The majority of students admitted enter at the junior level, although many transfer to Clark with sophomore and advanced freshman standing.

Of special interest to transfer candidates are the University's B.A./M.A. program options in the Environment, Technology and Society (ETS) Program and in the Program for International Development and Social Change. The application deadline is May 1 (December for places available at midyear).

TRANSFER REQUIREMENTS AND NOTIFICATION

All applicants for transfer are required to submit evidence of good standing, complete transcripts of all previous academic work—secondary level and beyond—including the Scholastic Aptitude Test if taken, and any other information requested by the Admissions Committee, such as recommendations and course description catalogs. Decisions are announced as soon as possible depending upon completeness and scope of records.

CAMPUS VISITS AND INTERVIEWS

Prospective students are encouraged to visit the campus and are invited to write or call the Admissions Office (617-793-7431) for details. Interviews, both on and off campus, are available with members of the admission staff or alumni by appointment in the fall and winter. Interviews are not an admission requirement.

Undergraduate Financial Aid

GENERAL INFORMATION

Financial aid is allocated on the basis of financial need and academic performance. Special talent in music, art, athletics, and other areas, as well as leadership ability also are considered. However, in no case will an award exceed a student's financial need. Aid is packaged—i.e., a combination of scholarships, grants, loans, and/or part-time employment. The Office of Financial Aid assesses each student's financial circumstances and need through a uniform analysis of the Financial Aid Form (FAF) and adjustments are made in accordance with University policies and procedures. The assessment takes into account family income and assets, age of parents, financial commitments to other dependents and members of the family, and other special circumstances.

The University expects that a student's resources for education will come first from family and his/her own savings and earnings. The University will make every effort to assist the student in obtaining the difference between the total cost and expected family resources. No student should fail to apply for admission to Clark University because of the inability of his/her family to pay total educational costs.

INDEPENDENT SOURCES OF ASSISTANCE

All applicants for financial assistance are urged to pursue independent sources of financial assistance. Clark cannot replace outside funds for which a student is eligible but fails to apply. Scholarships are often awarded to graduating seniors by high schools and/or private scholarship agencies in students' local communities. Additional information usually is available in guidance offices.

Residents of Massachusetts are expected to apply for a *State Scholarship*. To apply, students must complete state Financial Aid Forms (FAF), which may be obtained from guidance counselors or financial aid offices. Out-of-state students should investigate the possibility of using state scholarships at Clark.

An important source of federal financial assistance is offered in the form of *Pell Grants*. These grants, which vary in amounts up to \$1,900 per year, are available to students who demonstrate financial need according to Federal regulations. All applicants for financial aid are required to apply for a Pell Grant. Students may apply for a Pell Grant by checking the appropriate item on the FAF.

The *Guaranteed Student Loan Program* is designed primarily for middle income families who do not qualify for other types of financial assistance. For those who need additional help, the pro-

gram may be utilized as a resource to supplement grant, scholarship, and loan. Offered through lending institutions, the program is partially subsidized by Federal funds. Loans up to \$2,500 per academic year are offered in all states. Additional information and application materials are available at local banks. Information also may be obtained at the Financial Aid Office.

Veteran's Benefits may be available for service veterans and children of deceased and/or disabled veterans. Eligibility can be determined by contacting your local Veterans Administration Office.

Rehabilitation Assistance may be available for students who qualify for educational benefits. Information concerning rehabilitation services can be obtained at the State Rehabilitation Office.

Clark University Financial Assistance

Clark University makes a commitment to entering students during their freshman year and in each subsequent year at Clark as long as they continue to demonstrate the same amount of financial need, continue to meet the standards of satisfactory academic progress, have filed all necessary application materials by the required deadlines, and have not exceeded program limitations of financial assistance, and as long as Federal funding to Clark's Financial Aid Office continues at the same level. Although any Clark student may apply for assistance as an upperclassman, level funding is guaranteed only to those students who received aid their first year at Clark and have met the above requirements.

Assistance at Clark is "packaged" in the form of scholarship, loan, grant, and/or employment from the following sources:

Alumni and Friends Scholarships—a portion of the University income is reserved for this purpose and gifts from alumni, parents, and friends provide additional scholarship funds.

Supplemental Educational Opportunity Grants—part of a federal program of assistance to college students demonstrating exceptional financial need. Continued support of this fund is contingent upon annual congressional allocations.

National Direct Student Loans—long-term loans that bear no interest until six months after a student ceases to be at least a half-time student at an institution of higher education. At that time, interest begins to accrue at the annual rate of 5 percent on the unpaid balance. A person borrowing from this fund will repay the amount in equal installments of at least \$30 per month

principal over an extended repayment schedule of up to ten years. Continued support is contingent upon annual congressional allocations.

Student Employment—available during the summer and part time during the academic year. The basic source of funds for employment is the Federal College Work-Study Program. Jobs, offered as part of the package of financial assistance, and placements are handled by the Financial Aid Office. In addition, the Job location and Development Office assists students in finding part-time employment. Although the service operates under the auspices of the Financial Aid Office, it is available to all students regardless of financial need.

ENDOWED SCHOLARSHIPS

Most grants awarded by the University are designated Alumni and Friends Scholarships. Funds for these scholarships are derived from endowed funds. (Because of the various restrictions placed on these funds, it is the policy of the University to select eligible recipients. Students should not apply directly.)

The Reginald Bryant Allen Fund

The Alumni Group Scholarship

The Association of Colored Peoples Scholarship Fund

The Richard Barnes Memorial Scholarship Fund

The B'nai B'rith Scholarship

The Stella Malkasian Boy Scholarship Fund

The Gertrude and William Brodie Award

The Charles W. and Annie L. Bruninghaus Fund

The Reina and Isadore Chaiklin Scholarship Fund

The Clark University Faculty Women's Club Scholarships

The Gloria Woolson Cockburn Memorial Scholarship Fund

The Celia Daspin Memorial Scholarship Fund

The Depaul-Cunningham Student Loan Fund

The Gladys Gunderson Diliberto Fund

The Ruth and Loring Dodd Scholarship Fund

The Thomas J. Dolphin Scholarship Fund

The Theodore T. and Mary E. Ellis Fund

The Albert C. Erickson Scholarship

The Leon E. Felton Memorial Scholarship Fund

The A.D. Ross Fraser Scholarship

The Julian S. Freeman Memorial Scholarship Fund

The Aaron Fuchs Memorial Scholarship Fund

The Lillian and Selig Glick Scholarship Fund

The Paul S. Goldman Memorial Scholarship

The Wallace W. Greenwood Scholarship Fund

The Hall International Fellowship

The Bertram L. and Bessie T. Handleman Fund

The Frank H. Hankins Scholarship

The High School Basketball Tournament Scholarship

The Lennard A. Hill ('57) Memorial Scholarship Fund
 The Gertrude and Eva Hillman Scholarship
 The Frances Tufts Hoar Fund
 The Ruth G. Hodgkins Scholarship Fund
 The Drs. Burton P. and Herbert H. Hoffner Endowed
 Scholarship Fund
 The Frederic W. Howe Jr. Scholarship Fund
 The Ann P. Hubbard Memorial Scholarship Fund
 The Gordon A. Hubley Fund
 The M. Hazel Hughes Scholarship
 The Jean E. and Theodore H. Hurwitz Scholarship Fund
 The Howard Bonar Jefferson Endowed Scholarship Fund
 The George N. Jeppson Scholarship Fund
 The Johnson-McLean Scholarship Fund
 The Kappi Phi Scholarship Fund
 The Ella O. Keene Scholarship Fund
 The George F. Kneller Scholarship Fund
 The Levi Knowlton Fund
 The Dr. Edmund Randolph Laine Scholarship Fund
 The David Ashley Leavitt Memorial Scholarship Fund
 The Joseph Leavitt Scholarship Fund
 The Dwight E. Lee Scholarship Fund
 The Elizabeth T. Little Scholarship Fund for Women
 The Homer Payson Little Scholarship in Geology
 The Livermore and Ambulance Drivers Scholarship
 The Robert H. Loomis Scholarship
 The Lieutenant Louis J. Luvisi Jr. Scholarship Fund
 The Chester W. Malmstead Loan Fund
 The Clara A. Mayo Memorial Fund
 The Joshua Morrison Scholarship Fund
 The Nazareth Nanigian and Manasseh Nanigian Memorial
 Scholarship Fund
 The Alice Friend Newton Memorial Scholarship
 The Norton Company Scholarship
 The Gerim M. Panarity Scholarship Fund
 The Abraham Persky Scholarship Fund
 The Joseph Persky Scholarship Fund
 The Mary E. and Irene L. Piper Scholarships
 The Gerard Pomerat Scholarship Fund
 The Charles B. Randolph Fund
 The Helen Brewster Randolph Memorial Scholarship
 The Jennie L. Richardson Scholarship
 The William Richardson Scholarship
 The Elliott Stephan Sahagian ('67) Scholarship Fund
 The Sanford Memorial Scholarship
 The Samuel Schanberg Memorial Scholarship Fund
 The Fredric T. Sewall Scholarship Fund
 The Dr. David M. Shor Memorial Scholarship Fund
 The Jacob L. Shor Memorial Scholarship Fund

The Henry L. Signor Scholarship
The Abraham Solomon Scholarship Fund
The Harry D. and Anita Solomon Endowed Scholarship Fund
The Saul Reuben Stein Student Loan Fund
The William T. and Barbara H. Stimson Scholarship Fund
The Russell S. Thompson ('18) Scholarship Fund
The Michael Thomas Tucker Memorial Scholarship Fund
The Benjamin R. and Grace F. Vanderford Student Aid Fund
The Henry A. Willis Scholarship
The Harold C. Wingate Memorial Scholarship Fund
The George M. and Bee Wolfe Scholarship Fund

APPLICATION PROCEDURES

In addition to filing an application for admission, all freshman candidates applying for financial assistance must submit a completed Financial Aid Form (FAF) to the College Scholarship Service by February 15, and direct that a copy be forwarded to Clark University. The Financial Aid Form may be obtained from the secondary school guidance office. Offers of financial assistance will be made simultaneously with, but independent of, the decision of the Admissions Committee. Each recipient is required to verify the information reported on the FAF by filing a copy of the parents' and student's most recent federal income tax return. Early decision candidates should file an Early FAF by November 1. The form may be obtained from the Admissions Office.

Prospective transfer students who are requesting financial assistance should submit the FAF to the College Scholarship Service at the same time application is made for admission. Each transfer student must submit a copy of the parents' and student's latest federal income tax return to the Financial Aid Office and request a Financial Aid Transcript from all colleges that the student previously attended. Award notification will be made after acceptance to the University. Applicants will not be required to post an admission deposit before receiving a financial aid decision.

Upperclassmen must reapply annually for financial assistance by submitting an updated FAF to the College Scholarship Service and an Application for Upperclass Students to the Financial Aid Office by March 1. In addition, a copy of the parents' and student's previous year's income tax form (Form 1040) must be filed with the Financial Aid Office by April 15. Clark financial assistance is renewed as long as the applicant meets the requirements described in the first paragraph of this section.

Any new student interested in financial assistance should request a copy of the Clark University Financial Aid Guide from the Admissions Office, which contains all pertinent financial aid information.

The Graduate School

General Information

When Clark University was established in 1887, it was strictly a graduate institution. In fact, Clark was the second graduate school in America (after Johns Hopkins). Over the years, Clark's graduate school has trained leading scholars and practitioners in a wide array of fields. It also has been at the center of major research breakthroughs in disciplines as diverse as physics, geography, and psychology.

Clark offers graduate programs leading to doctoral and master's degrees. Admission to Clark's graduate programs is open to holders of the bachelor's degree or its equivalent, and is determined on a competitive basis. All programs are administered by the Graduate Board. Candidacy for the master's degree generally requires one or two years of study and candidacy for the Ph.D. at least four years of study, although requirements vary across departments.

Doctor of philosophy degrees are offered in biology, the biomedical sciences, chemistry, chemical physics, economics, geography, history, mathematics, physics, and psychology. Doctoral students in the biomedical sciences and in psychology may also enroll in courses given cooperatively with the University of Massachusetts Medical School, the Worcester Foundation for Experimental Biology, and the Worcester Polytechnic Institute. Doctor of education degrees in special education and in educational management are offered by the Department of Education.

Master of arts degrees are offered in the fields of biology, chemical physics, chemistry, education, English, environmental affairs, geography, history, international development mathematics, physics, and psychology. The master of business administration degree is offered by the Graduate School of Management and the master of health administration is offered by the Graduate School of Management in conjunction with the University of Massachusetts Medical School. Through the College of Professional and Continuing Education (COPACE), Clark also offers the master of public administration and the master of arts in liberal arts degrees.

Departments that do not, at present, accept candidates for graduate degrees may offer courses suitable for inclusion in a program of graduate study. In addition, postdoctoral training is conducted in geography, psychology, and the sciences.

There is a wide variety of financial support available for incoming graduate students. Most departments offer teaching assistantships fellowships, and research assistantships. Often these come with a living stipend as well as tuition grants. Some specific

examples of fellowship awards are listed at the end of this section. Additional information about departments and their offerings may be found in the section entitled *Departments and Courses*.

INQUIRIES

Inquiries from American and foreign students concerning specific programs of graduate and postdoctoral work should be addressed to the chair of the department concerned. Please check catalog section, *Departments and Courses*, for names of department chairs and program directors.

ADMISSION TO GRADUATE SCHOOL PROGRAMS

Admission to the Graduate School may be granted only by the dean of the Graduate School acting for the Graduate Board on the recommendation of a department or program of the University. An official letter from the graduate dean is the formal notification procedure. Admission to the school does not imply admission to candidacy for a degree.

Application: An applicant from an American institution should communicate with the appropriate department or program head. The applicant will be provided with an application form, which, accompanied by a \$30 application fee, should be returned to the department or program. In addition, the applicant should arrange the forwarding of an official transcript of all undergraduate and any subsequent academic work and three letters of recommendation from persons who are competent to judge qualifications for graduate study.

Department or program heads may request the submission of additional material, and most require a record of attainment in the Graduate Record Examination given by the Educational Testing Service, Princeton, New Jersey. All applicants are urged to submit their scores on the Graduate Record Examination verbal, quantitative, and advanced tests. Applicants to the Graduate School of Management programs (master of business administration or master of health administration) *are required to take GMAT* rather than GRE examinations.

In addition to an application and \$30 fee, a foreign student, should provide a certified English translation of the official transcript, evidence of English proficiency (TOEFL), at least three letters of recommendation, and a statement concerning the applicant's financial resources or agency support.

Application Deadlines:

Most programs:	February 15 for forthcoming fall
Psychology:	January 30 for forthcoming fall
Management:	One month prior to each semester (September, January, or May)

Application materials cannot be returned. A *Financial Aid Form* must be submitted through the College Scholarship Service before awards can be made.

Admission: Admission to the Graduate School is valid for a specified time only and lapses after that period. If a student is admitted while still a candidate for a degree from another institution, an updated transcript noting the conferment of that degree must be sent directly to the dean of the Graduate School.

Part-time Admission: Part-time graduate study is possible in some departments; see section entitled *Departments and Courses*.

Special Graduate Students: Admission as a special graduate student (nondegree candidate) is a simple enrollment process handled through the Registrar's Office. The grading system for these students is: A-F (with plus and minus) or Pass/Fail.

MASTER OF ARTS

Residence: An academic year (eight semester-courses) of study in residence is a minimum requirement for a master's degree. Individual departments or programs may require longer periods of residency. Residence study is broadly defined as graduate work done at Clark University under the immediate personal supervision of at least one member of the University faculty.

Foreign Language: Language or other special requirements are included in the department listings in this catalog.

Candidacy: Application for admission to candidacy for a master's degree must be filed with the dean of the Graduate School not later than the first week of the last full semester the student expects to spend in residence as a candidate for a degree. Forms are obtainable at the Graduate School Office.

Applications will be considered by the Graduate Board when the student has completed one semester of full-time graduate work or its equivalent in residence at the University and obtained the written endorsement of the major department or program.

Candidacy for the degree of master of arts is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years on vote of the Graduate Board.

Course and Examination Requirements: Each student must complete at least eight semester-courses in a program approved by the department. One course may be a research course devoted to the preparation of the thesis. Credit for a maximum of two courses at another institution may be approved by the dean of the Graduate School upon recommendation of the department.

Each candidate must pass such written examinations as are required by the major department and a final oral examination by a committee of three or more, one of whom must be a member of the Graduate Board.

Thesis: The thesis is written on a topic in the field of the student's special interest under the supervision of a member of the

department and in a style, length, and format that is appropriate to the problem being researched. The ribbon copy of the thesis, a precis approved by the supervising instructor, and an academic history must be deposited with the University format adviser not later than four weeks before the date of commencement. At least one additional copy of the thesis and the precis must be delivered to the major department, which may require more than one copy. The precis may not exceed 75 words. The title page, precis, and academic history forms are obtainable from the University format adviser. The ribbon copy of the thesis must be typed as prescribed in *Format Regulations for Theses, Dissertations and Research Papers*. These instructions are available from the format adviser.

The thesis becomes part of the permanent collection in the University library. The precis is printed in an annual publication, *Dissertations and Theses*.

Diploma Fee: The fee for the master of arts degree is \$25. It covers the cost of the diploma, publication of the precis in *Dissertations and Theses*, and binding of the library copy. It is payable when the thesis is deposited with the format adviser. Students who do not write a thesis, including those receiving the degree on the alternative program, must pay this fee no later than the date on which theses are due to the University format adviser.

Alternative Program: A candidate for the degree of master of arts may be recommended for the degree without a thesis after passing a preliminary doctoral examination.

Nonresident Students: Continuing students who are not registered for courses at Clark are required to pay a nonresident fee of \$100 per semester to maintain active status. If fees are unpaid, the student will be dropped from the degree program. (Fees double upon renewal of candidacy.) For information on nonresident loan deferment status, see the *Graduate Tuition* section.

MASTER OF ARTS IN EDUCATION

The residency, candidacy, course, examination, and diploma fee requirements are the same as those listed for the degree of master of arts.

Thesis: Students may choose one of three options, subject to the approval of the Department of Education. They may choose to: (1) prepare a thesis as required for the M.A. degree; (2) elect two additional subject-matter courses; or (3) elect a research seminar in which papers are prepared and presented to fellow students and staff.

Further information concerning the degree of master of arts in education may be found under the Department of Education.

MASTER OF ARTS IN LIBERAL ARTS

For further information, contact the College of Professional and Continuing Education, Clark University.

MASTER OF BUSINESS ADMINISTRATION

This degree is offered through the Graduate School of Management. For further information, see listings under the Management section.

MASTER OF HEALTH ADMINISTRATION

This degree is offered through the Graduate School of Management in conjunction with the University of Massachusetts Medical School, Worcester. For further information, see listings under the Management section.

MASTER OF PUBLIC ADMINISTRATION

For further information, contact the College of Professional and Continuing Education, Clark University.

DOCTOR OF EDUCATION

The program leading to the doctor of education emphasizes human development and learning, as they relate to curriculum, instruction, and evaluation, and the sociology of education. The requirements for this degree closely parallel those for the degree of doctor of philosophy (see below). See catalog section on Department of Education for further information.

DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

The Biomedical Sciences Ph.D. Program began in 1975 with the recognition that certain individuals without a standard academic background, but with previous research experience and an outstanding aptitude for independent research, may benefit from a relatively unstructured program leading to the Ph.D. degree. This is a cooperative program involving Clark University, the University of Massachusetts Medical School, Worcester Foundation for Experimental Biology, and Worcester Polytechnic Institute. It utilizes the faculty, facilities, and varied research interests in the biomedically-related sciences in the Worcester area. The primary criteria for admission are research ability and potential, and evaluation of applicants is based largely on evidence of their previously performed research. Award of the Ph.D. requires passing of a preliminary examination and presentation and defense of a research thesis. Competence in the major field in preparation for the preliminary examination can be achieved through independent study, directed study, or formal courses. The Ph.D. degree may be awarded by either Clark University or Worcester Polytechnic Institute, although dissertation research may be done at any of the participating institutions under the sponsorship of a faculty member from that institution. Areas for conducting of dissertation research reflect the varied research programs of faculty from the participating institutions. These include, but are not limited to: cellular and molecular biology; cell senescence; metabolism, endocrinology, and immunology; pharmacology and

experimental pathology; reproductive biology, physiology, neuro-biology, and behavioral science; biological engineering, related to nitrogen fixation and development of new symbiotic systems with blue-green algae; bio-mass and bio-energy (silviculture and fermentation technologies).

Admission: The primary criterion used in selection of students for this program is the demonstrated capacity of the applicant to do independent research. In addition to the application form, applicants submit official transcripts of undergraduate and graduate work, Graduate Record Examination (GRE) scores, three letters of reference, and evidence of outstanding research ability (e.g., publications, abstracts, etc.). More complete information may be obtained from the program director.

Applications and all supporting documents should be submitted to the Director, Biomedical Sciences Ph.D. Program, c/o Personnel Office, Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545. Application may be made at any time during the year.

DOCTOR OF PHILOSOPHY

Only well-qualified candidates with proven ability in their special fields of study will be encouraged to proceed to the degree of doctor of philosophy.

Residence: The minimum requirement is one year of full-time study (eight semester-courses beyond the M.A.) or its equivalent in part-time work, in residence.

If the degree of master of arts has been earned at Clark, this requirement is in addition to the residence requirement for that degree.

Foreign Language: Each graduate department sets its own language or related requirements as the student's field of research may demand and must report such requirements in each case to the dean of the Graduate School. If a language is required, either a testing service or on-campus tests are employed at the discretion of the department.

Preliminary Examination: Upon completion of preparation in the fields of study, a prospective candidate takes a preliminary examination set by the major department. This examination may be written or oral, or a combination of both. The chair of the department may invite other scholars from within or outside the University to participate in the examination.

Candidacy: An application for admission to candidacy should be filed when the applicant has: (1) completed two full academic years of graduate work or its equivalent in part-time work, including one year at Clark University; (2) completed the departmental requirements in a foreign language, (3) passed a preliminary examination in the chosen field of study, (4) obtained the written endorsement of the major department. Application forms can be obtained from the Graduate School Office.

Candidacy for the degree of doctor of philosophy is valid for three years after admission to candidacy. Candidacy may be renewed once, for satisfactory reasons, for an additional period of three years by vote of the Graduate Board.

Dissertation: A dissertation, which is expected to make an original contribution to a special field of knowledge, is required of each candidate. The dissertation, approved by the chief instructor or dissertation committee, is presented to the examining committee at the final oral examination.

An abstract of the dissertation, not exceeding 350 words, and a precis, not exceeding 75 words, both approved by the dissertation advisors, are also required.

Four weeks before the degree is to be conferred, the ribbon copy of the dissertation, together with two official title pages, an academic history, an abstract and a precis, must be delivered to the University format adviser. At the same time, one or more copies of the dissertation and of the abstract may be required by the major department. The title pages, precis, and academic history forms can be obtained from the format adviser. The ribbon copy of the dissertation must be typed as prescribed in *Format Regulations for Theses, Dissertations, and Research Papers* and *Suggestions for the Preparation of Doctoral Dissertations for Microfilming*. These instructions are available from the format adviser.

The dissertation and abstract become part of the permanent collection in the University library. A microfilm copy of each dissertation is made by University Microfilms, Inc., of Ann Arbor, Michigan, and is available for duplication on request to that company. The abstract is printed in *Dissertation Abstracts*; the precis is printed by Clark in a biennial publication, *Dissertations and Theses*.

Articles published in refereed journals may be accepted in lieu of a dissertation with the approval of the department and the graduate dean. Requests for approval should include statements that attest to the originality and significance of the study.

Final Examination: An oral examination lasting at least two hours is required. Additional written examinations may be required if the major department so directs. The candidate is expected to defend the dissertation and, at the discretion of the examining committee, may be questioned on the entire special field of study. The oral examination is conducted by a committee of at least four members, composed of at least one member of the Graduate Board and such members of the department and non-members from within or outside the University as the chair may appoint. The chair notifies the dean of the Graduate School, at least one week in advance, of the time and place of the examination and the composition of the committee. The dean is authorized to invite any person from within or outside the University to be present and to assist in the examination.

Diploma Fee: The fee for the doctor of philosophy degree is \$85.

It covers the cost of the diploma, hood, publication of the precis in the publication *Dissertations and Theses*, publication of the abstract in *Dissertation Abstracts*, and binding of the library copy of the dissertation. It is payable when the dissertation is deposited with the University format adviser.

Nonresident Students: Continuing students who are not registered for courses at Clark are required to pay a nonresident fee of \$100 per semester to maintain active status. If fees are unpaid, the student will be dropped from the degree program. (Fees double upon renewal of candidacy.) For information on nonresident loan deferment status see *Graduate Tuition* section.

POSTDOCTORAL STUDY

Postdoctoral students are classified in two categories. *Research Associates*, who work full time with designated members of the University staff on research projects, normally supported by grants, without formal teaching duties but with some responsibility for directing laboratory assistants; and *Postdoctoral Fellows*, who enroll in a formally offered postdoctoral training program.

GRADUATE ACADEMIC REGULATIONS

GRADING

The grades of A and B (with plus and minus) are acceptable for graduate credit; anything lower than a B- is not acceptable. A Pass/Fail grading option is possible, where "P" (pass) signifies that the student has performed at a B- or above level. Incompletes are awarded at the discretion of the instructor.

HOUSING AND BOARD

Off-campus rooms and apartments for both men and women are available in the immediate area of the University. A limited listing of current housing opportunities is posted in several academic buildings, particularly the Dean of Students Office and the International Programs Office. Students are urged to arrive before registration to seek suitable off-campus housing in the area.

Graduate students are invited to take meals in the University dining halls under one of the food plans available. The Snack Bar also is available for single meals.

HEALTH INSURANCE

Before registering for classes all graduate students are *required* to demonstrate adequate medical insurance coverage. Students may enroll in the Clark University Student Health Insurance Plan. Applications are available at the Graduate School Office.

HEALTH SERVICE

Graduate students who wish to use the on-campus Health Service may do so by paying the health fee at the Bursar's Office. At

that time they will be issued a Health Service Identification Card. For a description of the Clark University Health Service, see the listing under Student Services of the Undergraduate College.

Graduate Tuition and Other Charges

Full-time Graduate Students:

Tuition: \$8,400 per academic year (or \$4,200 per semester)

In departments that define a full load as four courses per semester, the per-course charge is \$1,050. The per-course charge varies in some departments according to their specific definition of a full program. Students should contact their department chairs to find out which scale applies.

Part-time Graduate Students:

Tuition is charged on a per-course basis according to the scale used in the student's department (generally, \$1,050 per course).

Special Graduate Students (non-degree candidates)

Tuition: \$1,050 per course.

Tuition and fees differ in the following programs:

Contact the Graduate School of Management for further details on:

Master of Business Administration

Master of Health Administration

Contact the College of Continuing and Professional Education for further details on:

Master of Arts in Liberal Arts

Master of Public Administration

OTHER FEES—payable at registration:

Health and Accident Insurance (mandatory)

Single Students	\$177
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Married Student and Spouse	\$354
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Family Plan	\$550
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<i>Health Service Fee (optional)</i>	\$ 90
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Diploma Fee—payable at the time the thesis or dissertation is deposited with the Registrar.

Master's Degrees	\$ 25
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Doctoral Degrees	\$ 85
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Students who do not write a thesis or dissertation, including those receiving the degree through the alternative program, must pay this fee no later than the date on which theses are due to the University format adviser (generally, April 15).

NONRESIDENT FEES:

\$100

Payable November 1 and March 1: \$100 per semester. All degree candidates who are not formally enrolled in course work must pay the nonresident fee each semester until the final copy of the thesis or dissertation is approved by the University format adviser. If these fees are not paid by the close of the fiscal year, the student will be dropped from the program. (Fees double upon renewal of candidacy.)

Loan Deferment for Nonresident Students:

Nonresident graduate students who are completing their thesis or dissertation on a *half-time* basis are limited to two years of student deferment status on their college loans. Nonresidents completing their thesis or dissertation on a *full-time* basis are limited to *one year* of student deferment status.

Billing Policy:

Tuition and fees are due within 30 days of date of issuance of invoice. Accounts 30 days or more past due are assessed interest at the rate of 1.5 percent per month (annual rate of 18 percent).

Late Registration Fee:

\$25

A late fee of \$25 is charged if registration is not completed by the end of the first week of the semester.

Refund:

Withdrawal from the University requires formal notice, in writing, to the dean of the Graduate School. A refund will be made according to the date the dean receives the withdrawal notice. Refunds are as follows:

Prior to the start of classes:	100%
During the first <i>two weeks</i> of classes:	60%
Third week of classes	40%
Fourth week of classes	20%
After fourth week of classes	0%

There is no refund on other charges, except board, when a student withdraws from the University.

FINANCIAL ASSISTANCE

U.S. applicants for admission who request financial assistance are required to file a Financial Aid Form with the College Scholarship Service as part of their application. This form, along with specific instructions, should be requested by contacting the applicant's prospective department or program. Financial aid is not necessarily based on an evaluation of the student's need.

GRADUATE SCHOLARSHIPS, FELLOWSHIPS AND ASSISTANTSHIPS

Graduate fellowships and scholarships are provided for well qualified students by the University from endowed funds and from other sources. Financial aid to graduate students also is

available in the form of grants from a number of special funds and, in some departments, from sponsored research grants. A limited amount of part-time employment is available in the various offices and departments of the University. Students who receive awards must obtain permission from the department before accepting employment.

Application for a scholarship or fellowship to begin in September should be made before February 15 to the chair of the department or director of the program in which the applicant expects to do major work. Late applications, after endorsement by the department, go to the dean of the Graduate School for final approval.

RESEARCH FELLOWSHIPS

These fellowships may be awarded to graduate students who have fulfilled their residence requirements and who are pursuing a full-time doctoral program on campus.

TEACHING ASSISTANTSHIPS

Teaching assistants are assigned a variety of duties according to the needs of the department. Responsibilities include conducting discussion sessions, supervising laboratory sections, holding tutorial sessions, and grading papers and projects. Assistantships typically involve a commitment of approximately half time (an average of 17 1/2 hours a week). Tuition is remitted, and a stipend of \$5,000 for eight months is awarded.

Note that the departments of biology, chemistry, economics, English, geography, history, mathematics, physics, and psychology require teaching experience for graduate degrees.

ASSISTANTSHIPS

Assistantships are available in several departments. Assistantships involve a variety of services including research with appropriate stipends and usually provide the student with experience which will be useful in later professional work.

GRADUATE FELLOWSHIP AND SCHOLARSHIP FUNDS

Stipends for fellowships and scholarships are provided by:

The Alumni Association Fund, provided by alumni who hold the degree of doctor of philosophy to benefit students studying for that degree.

The George S. Barton Fund, a bequest from the Honorable George S. Barton of Worcester, to be used for the benefit of native-born citizens of Worcester.

The Elnora W. Curtis Fund, a bequest from Dr. Elnora W. Curtis (A.M. 1908, Ph.D. 1910) for the benefit of graduate students.

The Eliza D. Dodge Fund, to be granted to graduate students of limited means who are engaged in research work.

The Henry Donaldson Jordon Award in History, for high stan-

dard of scholastic achievement and qualities of character which will be valuable in the training of teachers.

The Joseph F. Donnelly Memorial Fund, a bequest from Lucretia F. Donnelly to help men who are enrolled in a course leading to the degree of doctor of philosophy.

The John White Field Fund, established by Mrs. Eliza W. Field to provide for the minor needs of a scholar or fellow.

The Austin S. Garver Fund, a bequest from Austin S. Garver, member of the Board of Trustees from 1908 to 1918.

Graduate School Scholarship Fund, a bequest from Alexander H. Bullock, a member of the Board of Trustees from 1926 to 1946 and president of the Board from 1938 to 1946.

The George Frisbie Hoar Fund, the gift of Andrew Carnegie in honor of the second president of the University's Board of Trustees.

The Ella O. Keene Scholarship Fund, established by Ella O. Keene (M.A. 1937) for women geography students.

The Myers Fund, a gift of George E. Myers (Ph.D. 1906) to assist graduate students to do research in education and psychology.

The David J. Ott Scholarship, a scholarship designed to support a qualified student towards the Ph.D. degree in economics. The successful candidate is assured support (tuition plus stipend) for three years at Clark.

The Charles H. Thurber Fund, provided by Charles H. Thurber, member of the Board of Trustees from 1913 to 1938 and president of the Board from 1919 to 1937.

GRADUATE LOANS

Loans, bearing interest at ten percent per year after completion of residency, are available on a limited basis for full-time graduate students upon registration. Applications are available at the Graduate School Office.

LOAN FUNDS

The Mary S. Rogers Scholarship and Loan Fund, established in 1926 for the benefit of students in the Graduate School.

The Mary M. Thurber Fund, established by the late Dr. Charles L. Thurber, former president of the University Board of Trustees, as a memorial to his mother.

The United States Steel Foundation Fund, established primarily for American citizens studying in the areas of psychology, geography, economics, biology, and chemistry.

For loans from these and other sources that may become available, application should be made at the Graduate School Office.

DEPARTMENTAL FUNDS

The Wallace W. Atwood Research Fund. The income from this fund may be used at the discretion of the staff in the Graduate School of Geography for the promotion of field studies in geog-

raphy by any member of the staff, or any one of the alumni holding a graduate degree from the Graduate School of Geography, or for the publication of results of such research work.

The Chester Bland Fund. The income from this fund preferably is used to provide aid to a promising student, either in residence or engaged in research elsewhere, under the direction of the Department of History. It also may be used to defray the expense of visiting lecturers or of departmental research.

The Wallace W. Greenwood Fund. The income (only) is to be divided between the Departments of Physics and Chemistry and to be used for any purpose within the scope of these two departments.

The Morton L. "Sonny" Lavine Foundation is a memorial to Lieutenant Lavine of the United States Army, World War II. The income is to be used for the promotion of research in the Department of History.

The Libbey Fund, bequeathed to the University by Mary E. Libbey, is to establish a fellowship in physical geography and to aid the department in that field.

The Clara A. Mayo Memorial Fund, established by Joseph A. Weiss in memory of his daughter Clara A. Mayo (Ph.D. 1959). The fund is to be used to provide assistance to women graduate students in the Psychology Department.

Departments and Courses

American Studies

PARTICIPATING FACULTY

John J. Conron, Ph.D., *program director*: American literature, American studies, American landscape

Albert A. Anderson, Ph.D.: aesthetics, ancient philosophy, metaphysics

James F. Beard Jr., Ph.D.: American literature, American studies, American fiction, twentieth-century American fiction and drama

George A. Billias, Ph.D.: colonial American history, comparative history, military history

John C. Blydenburgh, Ph.D.: elections, polling, national politics

Martyn J. Bowden, Ph.D.: cultural humanistic and historical urban-social geography

James P. Elliott, Ph.D.: American literature, literature and film, contemporary narratives; editing

Bonnie Lee Grad, Ph.D.: nineteenth- and twentieth-century art

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

William A. Koelsch, Ph.D.: history of geography, environmental history

Sharon Krefetz, Ph.D.: urban politics, suburban politics, women and politics

Robert J. Ross, Ph.D.: urban studies, political sociology, political economy, social policy

AMERICAN STUDIES CONCENTRATION

The American Studies Program at Clark is neither a department nor a major but a concentration of seven required courses designed both as an extension of traditional majors and as a coherent undertaking in itself.

Concentration in the American Studies Program offers an interdisciplinary approach to the study of those human values that define American culture and variously manifest themselves in physical, social, and intellectual environments—in events, in institutions, and in the arts (primarily literature, painting, film, and architecture). The concentration has two aims: One is to enable students to analyze closely a variety of “texts” (a group of people, a house, a poem) and to place these in a cultural “context,” which brings them into relation with each other. The other is to enable students to arrive at an understanding of American culture as a pattern of values, which permeates American space and changes over time.

Since this course of study is not in itself a discipline but rather a conversation between disciplines, the concentration is based on a conviction that the basis of this conversation is fluency in—or at least acquaintance with—traditional disciplines in the humanities and the social sciences. Students are therefore expected to augment their major discipline with introductory work in two other disciplines. They are further expected to

integrate and focus their study of American culture in the program offerings. Finally, they are encouraged to study, beyond the introductory level, topics of interest in the more than thirty courses on American subjects offered at Clark and at affiliated institutions.

Students concentrating in American studies are required to take:

- 1) three core courses: *Introduction to History and American Studies*; *American Culture and Society, 1820-1860*; and *American Thought and Culture Since 1860*.
- 2) four courses in either an American history/ literature or an American history/geography sequence. Students interested in the American history/literature sequence would elect two of the following history courses: 200, 201, 202, 206, 208, 209, 219, or 221; and both semesters of English 101. Students interested in the American history/geography sequence may include any two of the history courses listed above and two of the following geography courses: 252, 253, 255, or 272.
- 3) senior level work in courses of an interdisciplinary nature such as the existing cluster courses on landscape, sport, and culture and space that have an American focus, or a senior seminar. Consultation with the program director in senior level course work is strongly recommended.

AMERICAN STUDIES ELECTIVES

More than thirty courses in American subjects are taught at Clark and affiliated institutions. A list of the courses is available in the History and English Departments.

COURSES

INTRODUCTION TO HISTORY AND AMERICAN STUDIES/ Seminar

An introduction to basic problems of interdisciplinary study and historical method as revealed in American issues and writings. The nature of literary, historical, and sociological explanation of individual and group behavior is examined in the context of the disciplines of history and literature. Autobiography, biography, family history, narrative, fiction, and historiographical writings are read and discussed. Offered for credit as English 110 and History 110.

Mr. Formisano, Mr. Ford

Offered every year

AMERICAN CULTURE AND SOCIETY, 1820-1860/ Discussion

An interdisciplinary study of the emergence of America as a nation and as a distinctive culture. Attention is paid to the cultural geography, the arts (primarily literature and painting), and to some significant political and social issues of the period. Some of the germinal works in American studies (Leo Marx's *The Machine in the Garden* and R.W.B. Lewis's *The American Adam*, for example) are read to provide contexts for the study of representative cultural and social expressions of the period. The course includes field trips. Offered for credit as History 240 and English 240.

Mr. Conron, Staff

Offered every year

AMERICAN THOUGHT AND CULTURE SINCE 1860/ Discussion

Examines selected cultural patterns and themes in American thought from the Civil War onward. Readings and discussions draw on multiple disciplinary perspectives. Offered for credit as History 241 and English 241.

Mr. Conron, Staff

Offered every year

Ancient Civilization

PROGRAM FACULTY

Paul F. Burke Jr., Ph.D., *program coordinator*: Greek and Latin language and literature, Classical mythology, Classical art and archaeology, ancient history

Barbara Geller Nathanson, Ph.D.: ancient Jewish history, history of early Christianity, history of world religions, Near Eastern archaeology

Daniel C. Shartin, Ph.D.: history of ancient philosophy, Plato, Aristotle

Rhys F. Townsend, Ph.D.: ancient Greek art and architecture, underwater archaeology, Classical tradition in Western art, early Christian and Byzantine art

PROGRAM AND MAJOR IN ANCIENT CIVILIZATION

The Program in Ancient Civilization consists principally of courses offered by the four primary faculty participants whose scholarly fields are art history, classics, Jewish studies, and philosophy. Courses offered by other Clark faculty that fall into the general category of ancient civilization will be cross-listed as available.

The program offers an undergraduate major and makes available courses covering the entire spectrum of ancient Mediterranean culture including Greek, Hebrew, and Latin languages. Emphasis throughout the program is placed on the importance of familiarity with the ancient world for a sound understanding of the roots of modern Judaeo-Christian culture. The purpose of the major in particular is to supply the student with a sound interdisciplinary knowledge of the ancient Greco-Roman and Judaeo-Christian roots of Western civilization. Majors are expected to acquire a working knowledge of at least one of the principal languages of the ancient Mediterranean (Classical Greek, Hebrew, or Latin); this language component of the major program insures direct access to the culture, literature, philosophy, and history of the ancient world. Program faculty are also anxious that their courses be accessible to the general undergraduate population in order that as many Clark students as possible may be introduced to the various aspects of the ancient world by the comprehensive series of courses brought together here. By incorporating art history, Jewish studies, and philosophy with what has been traditionally identified as classics (Greek and Latin language and literature), the Clark Program in Ancient Civilization presents established disciplines in a stimulating and original configuration.

MAJOR REQUIREMENTS

In order to graduate as an ancient civilization major, a student must complete successfully at least ten courses in ancient civilization. These courses must include:

1. at least two courses, not both in the same department, from the group of foundation courses:

Art History 101, *Introduction to Western Art I*

Art History 110, *Greek Art and Architecture*

Classics 111, *Roman Art and Architecture*

Classics 121, *Introduction to Greek Culture*

Hebrew 173, *Introduction to the History and Culture of Ancient Israel*

Hebrew 174, *The Jewish Experience*

Hebrew 175, *Introduction to the History of World Religions*

Philosophy 121, *History of Western Philosophy*

2. at least one semester course at or above the intermediate level (language 103) in Greek, Hebrew, or Latin.
3. a one-semester senior seminar, to be taken preferably during the second semester of the senior year, to include the writing of a major research paper, and to be arranged in consultation with at least two members of the program faculty by the end of the junior year.

COURSES

A. ART HISTORY

101 INTRODUCTION TO WESTERN ART I

Refer to course description under Art History.

Mr. Townsend

Offered every year

105 THE AEGEAN WORLD

Refer to course description under Art History.

Mr. Townsend

Offered periodically

106 INTRODUCTION TO ARCHAEOLOGY

Refer to course description under Art History.

Mr. Townsend

Offered every other year

109 CLASSICAL MYTH AND THE GREEK IDEAL

Refer to course description under Art History.

Mr. Townsend

Offered every other year

110 ANCIENT GREEK ART AND ARCHITECTURE

Refer to course description under Art History.

Mr. Townsend

Offered every other year

161 ANCIENT CITIES AND SANCTUARIES

Refer to course description under Art History.

Mr. Townsend

Offered every other year

B. CLASSICS

GREEK

101/102 INTRODUCTORY GREEK

Refer to course description under Classics.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE GREEK

Refer to course description under Classics.

Mr. Burke

Offered every year

LATIN

101/102 INTRODUCTORY LATIN

Refer to course description under Classics.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE LATIN

Refer to course description under Classics.

Mr. Burke

Offered every year

CLASSICS COURSES TAUGHT IN ENGLISH

111 ROMAN ART AND ARCHITECTURE

Refer to course description under Classics.

Mr. Burke

Offered every other year

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHAEOLOGY

Refer to course description under Classics.

Mr. Burke

Offered every other year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY

Refer to course description under Classics.

Mr. Burke

Offered every other year

135 CLASSICAL GREEK TRAGEDY

Refer to course description under Classics.

Mr. Burke

Offered every other year

150 NARRATIVE IN ANCIENT HISTORICAL WRITING

Refer to course description under Classics.

Mr. Burke

Offered every other year

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics.

Mr. Burke

Offered every other year

C. JEWISH STUDIES

HEBREW

101/102 ELEMENTARY HEBREW

Refer to course description under Foreign Languages and Literatures/Hebrew.

Ms. Nathanson

Offered every year

103 INTERMEDIATE HEBREW

Refer to course description under Foreign Languages and Literatures/Hebrew.

Ms. Nathanson

Offered every year

104 INTERMEDIATE/ADVANCED HEBREW

Refer to course description under Foreign Languages and Literatures/Hebrew.

Mr. Waldoks

Offered every year

JEWISH STUDIES COURSES TAUGHT IN ENGLISH

173 INTRODUCTION TO THE HISTORY AND CULTURE OF ANCIENT ISRAEL

Refer to course description under History.

Ms. Nathanson

Offered every other year

174 THE JEWISH EXPERIENCE

Refer to course description under History.

Ms. Nathanson

Offered every year

274 RABBIS, ROMANS, AND RUINS

Refer to course description under History.

Ms. Nathanson

Offered every other year

D. PHILOSOPHY

121 HISTORY OF ANCIENT PHILOSOPHY

Refer to course description under Philosophy.

Mr. Shartin

Offered every year

250 PLATO SEMINAR

Refer to course description under Philosophy.

Mr. Shartin

Offered every other year

251 ARISTOTLE SEMINAR

Refer to course description under Philosophy.

Mr. Shartin

Offered every other year

E. HISTORY

175 INTRODUCTION TO THE HISTORY OF WORLD RELIGIONS

Refer to course description under History.

Ms. Nathanson

Offered every year

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Ms. Nathanson

Offered every other year

F. COMPARATIVE LITERATURE

118 MASTERPIECES OF WORLD LITERATURE

Refer to course description under Comparative Literature.

Mr. Burke

Offered every year

120 THE EPIC JOURNEY

Refer to course description under Comparative Literature.

Mr. Burke

Offered every other year

G. GEOGRAPHY

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT

Refer to course description under Geography.

Mr. Koelsch

Offered every other year

Art

See Department of Visual and Performing Arts.

Astronomy

PROGRAM FACULTY

Roy S. Andersen, Ph.D.: *chair*

UNDERGRADUATE PROGRAM

One course is available at the introductory level. Advanced topics directly relating to astronomy are listed under Physics. Students interested in advanced work in astronomy should consult with the instructor or the physics undergraduate adviser.

1 EXPLORING THE UNIVERSE/ Lecture, Discussion, Fieldwork

Explicitly designed for the nonscience major who wants to learn about the stars. Also intended to provide for the interests of the student who seeks an acquaintance with the concepts and methods of science but who does not wish to go into the depth of the typical introductory science survey course. Topics considered are interdisciplinary in character since astronomy involves physics, chemistry, biology, and geology. The use of mathematics is minimized; only simple algebra is utilized. Half of the course is devoted to consideration of the planets and the sun. In the other half of the course, the stars, their life cycles, and the galaxies are studied. Theories of the composition and origin of the solar system, of the universe, and of life are explored. The heavens are best understood by having students make direct observations of celestial objects. Emphasis is, therefore, placed on the making, analyzing, and reporting of observations on the moon, sun, planets, meteors, stars, variable stars, nebulae, and galaxies. Students make these observations using telescopes in the University observatory as well as on several night field trips.

Mr. Andersen

Offered every year

Biochemistry

PROGRAM FACULTY

John J. Brink, Ph.D., *cochair*: metabolic regulation, pharmacology, neurochemistry

Donald J. Nelson, Ph.D., *cochair*: protein chemistry, pharmacology

M. Margaret Comer, Ph.D.: molecular genetics

Frederick Greenaway, Ph.D.: bioinorganic chemistry, electron spin resonance

Michael Novak, Ph.D.: organic reaction mechanisms, metabolism of carcinogenic materials, kinetics

AFFILIATE FACULTY

George E. Wright, Ph.D.: pharmacology, mechanisms of drug-DNA polymerase interactions

PROGRAM

The Biochemistry Program at Clark is designed to serve three types of students with a basic interest in the health related sciences: 1) students who want to enter the field of biomedical laboratory technology upon completion of their undergraduate degree, 2) students who want to pursue

graduate studies in the biomedical sciences, and 3) students who want to enter medical school with a strong instrumental and biophysical background. Because of the highly specialized nature of the program, students may be formally admitted only after successful completion of *Organic Chemistry* (Chemistry 131 and 132). Admission is contingent upon the approval of the Biochemistry Advisory Committee (composed of all participating faculty members) and the permission of a faculty research adviser.

PROGRAM REQUIREMENTS

The basic requirements for the biochemistry major are: one course in mathematics beyond Math 11, two semesters of *Introductory Physics* (Physics 11 or 12) plus laboratory and three nonscience courses, of which one must be beyond the introductory level. The program requirements from within the Biology Department's curriculum are: two semesters of *Introduction to Biology* (Biology 100), one semester of either *Genetics* (Biology 118) or *Microbiology* (Biology 109), and one semester of either *Cellular Biology* (Biology 137) or *General Animal Physiology* (Biology 240). The requirements from within the Chemistry Department are: two semesters of *Introductory Chemistry* (Chemistry 101 and 102), two semesters of *Organic Chemistry* (Chemistry 131 and 132), and one semester of *Physical Chemistry I* (Chemistry 160). Following is a list of required biochemistry courses:

Bioanalytical Chemistry (Biochemistry 144)

Biophysical Chemistry (Biochemistry 164)

Biochemistry (Biochemistry 271 and 272)

Biochemistry Research (Biochemistry 214) or

Biochemistry Honors Course (Biochemistry 215)

In addition, students must complete one additional course from the biochemical sciences, such as:

Nutrition (Biology 170)

Protein Chemistry (Biochemistry 275)

Neurochemistry (Biochemistry 273)

Pharmacology (Biochemistry 278)

THE CAPSTONE EXPERIENCE

The culmination of the student's undergraduate biochemistry experience (the capstone experience) is the senior research project. The merging of learned theoretical biochemical concepts and acquired practical skills takes place in this exposure to semi-independent biochemical research.

COURSES

144 BIOANALYTICAL CHEMISTRY/ Lecture, Laboratory

Refer to course description under Chemistry 144.

Staff Offered every other year

164 BIOPHYSICAL CHEMISTRY/ Lecture, Laboratory

This rigorous course in physical chemistry, offered as an alternative to Chemistry 162, emphasizes the physical chemistry of biological systems: enzyme kinetics, spectroscopy of biological systems, macromolecules, transport processes, and X-ray diffraction. Prerequisite: Chemistry 160. Also listed for credit as Chemistry 164.

Mr. Nelson Offered every other year

214 SPECIAL PROJECTS/ Laboratory, Discussion

Individual investigations involving laboratory and/or literature research.

Offered for variable credit.

Staff

215 HONORS COURSE/ Laboratory, Discussion

The honors course, primarily for a major seeking departmental honors in biochemistry, involves a laboratory research project and participation in departmental seminars. Offered for variable credit.

Staff

228 MOLECULAR GENETICS/ Lecture, Seminar

Refer to course description under Biology 228.

Ms. Comer, Mr. Lyerla

Offered every other year

231 RECOMBINANT DNA/ Laboratory

Refer to course description under Biology 231.

Ms. Comer

Offered every other year

239 BIO-ORGANIC CHEMISTRY/ Lecture

Deals with the chemistry involved in some biologically important reactions, particularly acyl and phosphoryl group transfer reactions, and oxidation-reduction reactions. Information from *in vivo* and *in vitro* studies of biological systems is coordinated with knowledge developed from model studies with small molecules in an attempt to develop a cohesive picture of the chemical mechanisms of these biological reactions. The type of information that can be obtained from kinetic studies, isotopic substitution, transition state analogs, inhibition studies, model studies, etc. is discussed. An in-depth discussion of the factors involved in enzymic catalysis is an important part of this course. Other topics, which may be covered if time permits, include the biosynthesis of terpenes and steroids, and the chemistry of various cofactors including flavin, heme, biotin, etc. Prerequisite: Chemistry 132. Also listed for credit as Chemistry 239.

Mr. Novak

Offered every other year

271 BIOCHEMISTRY I/ Lecture, Laboratory**272 BIOCHEMISTRY II/ Lecture**

This two-semester course considers the basic principles and mechanisms of biochemical reactions in metabolic transformations of cell nutrients. The regulation of these processes by enzymes, genes, and hormones is considered in the light of modern theories of biochemical processes. A laboratory component for the first semester acquaints students with methods and instrumentation of biochemical research such as radioisotope techniques. The second semester covers advanced topics in biochemistry. Prerequisite: Chemistry 132. Also listed for credit as Biology 271 and 272 and Chemistry 271 and 272.

Mr. Brink, Mr. Nelson

Offered every year

273 NEUROCHEMISTRY/ Lecture

The metabolic aspects of brain amines and biopolymers are considered in relation to neural function. Effects of drugs on memory processes are discussed in terms of biochemical mechanisms. Prerequisite: Biochemistry 272. Also listed for credit as Biology 273.

Mr. Brink

Offered every other year

275 PROTEIN CHEMISTRY/ Lecture

Discusses the structure and function of biologically important macromolecules. Particular emphasis is placed on proteins (enzymes and non-catalytic proteins), protein synthesis from nucleic acids, and the structure and function of biological membranes. Prerequisite: Chemistry 132. Also listed for credit as Chemistry 275.

Mr. Nelson

Offered every other year

277 BIOCHEMISTRY OF DISEASE/ Lecture

Deals with the biochemical systems that are perturbed in metabolic regulatory processes as, for example, in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease). The effects of environmental influences represented by drug and nutrient components also are considered. Prerequisite: Chemistry 132 or permission of instructor. Also listed for credit as Biology 277.

Mr. Brink

Offered every other year

278 PRINCIPLES OF PHARMACOLOGY/ Lecture

Refer to course description under Biology 278. Also listed for credit as Chemistry 278.

Mr. Brink, Mr. Wright, Mr. Nelson

Not offered on a regular basis

Biology

DEPARTMENT FACULTY

John J. Brink, Ph.D., *chair*: biochemistry, neurochemistry, nutrition

Vernon Ahmadjian, Ph.D.: botany, symbiosis, developmental biology

Laurence Berlowitz, Ph.D.: molecular basis of development, sexual differentiation in insects

M. Margaret Comer, Ph.D.: molecular genetics

Joseph C. Curtis, Ph.D.: cell biology, electron microscopy, endocrinology

H. William Johansen, Ph.D.: phycology, marine biology

Todd P. Livdahl, Ph.D.: population biology, community ecology, evolution, biostatistics

Timothy A. Lyerla, Ph.D., developmental and biochemical genetics, human genetic diseases

John T. Reynolds, Ph.D., M.P.H.: applied and environmental microbiology, environmental health

Nicholas S. Thompson, Ph.D.: animal behavior, evolution

RESEARCH FACULTY

Linda M. Kennedy, Ph.D.: physiology, neurobiology, sensory function, taste

ADJUNCT FACULTY

Charles S. Blinderman, Ph.D.: history of biology, Darwinism, human evolution

Donald J. Nelson, Ph.D.: biochemistry, bioinorganic chemistry

AFFILIATES

Robert Beck, Ph.D.

Paul Erickson, M.A.

Warren Litsky, Ph.D.

Leonard Morse, M.D.

Harris Rosenkrantz, Ph.D.

EMERITUS

Rudolph F. Nunnemacher, Ph.D.: zoology, histology

UNDERGRADUATE PROGRAM

The Biology Department views as its primary roles for undergraduate education within the University: training biologists in a preprofessional sense, especially those individuals entering careers that use the biological sciences as their bases; providing support for other programs in the University that require some exposure to biology; and integrating the paradigms of the biological sciences into a liberal arts curriculum. The goals for its majors relate directly to the development of an independent or autonomous learner, particularly since this development is required for anyone who is to remain current with the ever-increasing body of knowledge in this field. With respect to its undergraduate majors then, the department attempts:

1. to provide an updated, coherent statement of the field—a curriculum organized to reflect the inherent organization of the discipline
2. to familiarize the student with the process by which biological information is acquired by exposing particularly the interrelationships between experiment and theory
3. to develop a critical facility in its students, an ability to judge quality work within this field.

The major in biology is suitable for those intending to apply for graduate studies in biology, medicine, dentistry, etc. Courses in the major must be taken for the letter grades, unless otherwise specified.

A departmental major must take eight courses in biology of which six must be courses more advanced than the introductory course. However, only two of the six courses may involve directed research, directed readings or an internship. The *Introductory Biology* year course is prerequisite for all other courses in biology, but students must fulfill prescribed prerequisites for specific courses.

A biology major must take, in related fields, a year of general chemistry, a year of introductory physics, and at least one additional year course in chemistry, physics, or geology, including in each case the laboratory, for a total of six semester or three year courses. Additionally, the major in biology must take a full year of calculus. None of the aforementioned courses may be taken on a "pass/ no-record" option.

At least nine courses of a major's program must be taken from courses outside the fields of biology, chemistry, geology, mathematics, physics and must not include any of the courses specified in the preceding paragraphs.

Each biology major entering Clark University in September 1984, or later, is required to take at least one course from each of the following three groups: (1) cellular and molecular biology—*Cell Biology*, *Genetics*, *Physiology*, or *Biochemistry*; (2) organismal biology—*Microbiology*, *Introductory Botany*, *Invertebrate Zoology*, or *Vertebrate Morphogenesis*; (3) supraorganismal biology—*Ecology*, *Population Biology*, *Marine Biology*, or *Mind in Evolution*. These requirements are optional for those students who declared as biology majors prior to September, 1984. Students who declared prior to September 1984 can refer to previous catalog for their requirements. Since *Animal Physiology* and *Biochemistry* have prerequisites of *Introductory Chemistry* and *Organic Chemistry*, respectively, these courses most likely would be taken during the junior and senior years.

The department urges all potential majors to select and to consult with an adviser to obtain the maximum benefits the department has to offer.

HONORS PROGRAM

An honors program is available to especially well-qualified majors and requires the student to engage in an independent research project during the senior year together with meeting other departmental requirements, i.e., a broad distribution of courses, quality grades, and an honors thesis and examination. Specific criteria for admission to the honors program are available in the departmental office.

GRADUATE PROGRAM

The department offers courses leading to master of arts and doctor of philosophy degrees in biochemistry, cell biology, developmental and molecular genetics, ecology, endocrinology, microbiology, phycology, population biology and symbiosis.

Admission to the graduate program assumes adequate preparation in the basic sciences, an overall undergraduate record of B or better, and satisfactory scores in the Graduate Record Examination. Tuition scholarships and teaching assistantships are available. Detailed information can be obtained from the department chair.

MASTER OF ARTS

The program usually requires three or four semesters of academic work and includes teaching experience and research culminating in an acceptable thesis.

DOCTOR OF PHILOSOPHY

The requirements, identical with those of the University, can be found in the catalog section on the Graduate School and include teaching experience. The student's program is planned according to his/her needs with his/her program director.

COURSES

100 INTRODUCTION TO BIOLOGY/ Lecture, Laboratory

A two-semester course designed with three goals in mind: (1) to provide students with an understanding of the unifying themes in modern biology, (2) to introduce students to the diversity of life forms at all levels of organization, and (3) to illustrate the methods and modes of scientific inquiry in the biological sciences. Emphasis on organismic and supraorganismic biology in one semester and on cellular and molecular biology in the other semester. Serves as a prerequisite for all other courses in biology except where noted.

Staff

Offered every year

102 NATURAL HISTORY OF NORTH AMERICA/ Lecture, Field Trips

The physical and biological features that characterize the biomes of North America. Emphasis is on (1) areas as they were before people arrived and (2) significant interactions that have occurred between us and the wilderness. Prerequisite: 100.

Mr. Johansen

Offered every other year

105 BIOLOGY AND MAN/ Lecture

An introductory course for those not majoring in biology. The course is a survey of biology emphasizing the relationships of various plants and animals to man. Our relation to current biological problems is discussed. Not for biology major credit. Biology 100 *not* required.

Staff

Offered periodically

107 MARINE ECOLOGY OF BERMUDA/ Field Course

A seven-day field study in June, at the Bermuda Biological Station. Not offered for credit.

Mr. Nunnemacher

Offered every year

109 MICROBIOLOGY/ Lecture, Laboratory

An introduction to the fundamental principles and methods of microbiology and their application to the biomedical and environmental sciences. Emphasis is on the bacteria. At least one college-level course in chemistry is advisable and Biology 100 is required.

Mr. Reynolds

Offered every year

110 INTRODUCTION TO BOTANY/ Lecture, Laboratory

Structure, development, and evolutionary relationships of plants are examined along with plant functions such as photosynthesis, communication, and transport. Aspects of plant ecology, genetics, hormones, and nutrition are treated. The diversity of plants is reviewed as well as their role in symbiosis and genetic engineering. Protists, fungi, and bacteria are considered in relation to plants. Prerequisite: Biology 100.

Mr. Ahmadjian

Offered every year

115 FLOWERING PLANTS/ Lecture, Laboratory

An introduction to the identification, classification, evolution, and ecology of flowering plants. Ferns, fern-allies, and gymnosperms are also considered. Short field trips to nearby areas to examine the spring flora. Permission of the instructor required.

Mr. Ahmadjian

Offered every other year

117 PRINCIPLES OF ECOLOGY/ Lecture

Provides an overview of ecology as a scientific discipline. The primary emphasis is placed on efforts to explain and predict the distribution and abundance of organisms, how ecological communities are composed, and why they vary in time and space. Prerequisite: Biology 100.

Mr. Livdahl

Offered every year

118 GENETICS/ Lecture, Discussion

Covers Mendelian genetics; the molecular nature and function of the gene; gene and chromosome mutation; genetic mapping in bacteriophages, bacteria, fungi, and higher organisms; and population genetics. Prior exposure to freshman chemistry is recommended. Prerequisite: 100.

Ms. Comer, Mr. Lyerla

Offered every year

121 VERTEBRATE MORPHOGENESIS/ Lecture, Laboratory

Combines the traditional *Vertebrate Embryology* and *Comparative Anatomy* courses into a single semester's study of the vertebrates. The evolutionary perspective is strongly emphasized and the course consists primarily of anatomical analyses of the vertebrate embryo and organ systems of the adult. It is open to students who previously have taken 221.

Staff

Offered every year

124 ENDOCRINOLOGY/ Lecture

The chemistry and biological actions of hormones are discussed with emphasis on the mammalian endocrine system. Integration of studies of the ultrastructure and biochemistry of endocrine glands and their target tissues are a major focus of this course. Prerequisite: Biology 100.

Mr. Curtis

Offered every year

126 GENETICS AND SOCIETY/ Lecture

A basic course in genetics for the nonscience major emphasizing methods of genetic analysis in humans and the role of genetics in modern society. Topics to be covered include: genetic diseases, chromosomal abnormalities, genetic screening, statistical analyses for polygenic traits, and population genetics. Biology 100 *not* required.

Mr. Lyerla

Offered every year

135 THE PARADOX OF ANIMAL SOCIOLOGY/ Lecture, Discussion

Refer to course description under Psychology 135.

Mr. Thompson

Offered every year

137 CELL BIOLOGY/ Lecture, Laboratory

The cell as a structural and functional unit will be studied. Introduction to the physicochemical properties and metabolic roles of molecules and macromolecules of cellular origin. Discussion of the roles of the nucleus and cytoplasm and cell membranes in the regulation of cell metabolism. Prerequisite: 100 or permission of instructor.

Mr. Curtis

Offered every year

170 PRINCIPLES OF NUTRITION/ Lecture

The perspective of human health is studied from the point of view of biological regulatory processes. The basic components of food are presented, and their biological function of maintaining human growth and vitality is studied. The role of food additives and cultural variations in diet in regard to pathology is discussed. Prerequisite: *Introductory Chemistry* or Biology 100 or permission of instructor.

Mr. Brink

Offered every year

183 LANGUAGE OF BIOLOGY/ Lecture

Concerned with the study of Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and anatomy. In addition, the course surveys the history of biology through its language: when certain concrete and abstract terms entered the language, who invented them, how their meaning may have changed, and possible alternate contemporary definitions.

Mr. Blinderman

Offered periodically

195 PURSUIT OF INQUIRY/ Lecture, Discussion

Refer to course description under Psychology 195.

Mr. Thompson

Offered every year

200 LABORATORY IN ETHOLOGY

Refer to course description under Psychology 200.

Mr. Thompson

Offered periodically

211 SYMBIOSIS AND PARASITISM/ Lecture

Symbiotic and parasitic associations including animals, plants, protists, fungi, and bacteria are studied. The descriptive and functional aspects of each type of association, are considered along with the experimental techniques that are used to study inter-relationships between symbionts. Prerequisite: 100.

Mr. Ahmadjian

Offered every other year

214 SEMINAR IN PHYCOLOGY

Selected topics dealing with algae from the structural, physiological, or ecological points of view are discussed. Prerequisite: 110 or permission of instructor.

Mr. Johansen

Offered every other year

215 INVERTEBRATE ZOOLOGY/ Lecture, Laboratory

A survey of 96 percent of all animal species, this course examines the major invertebrate groups from morphological, ecological, and evolutionary perspectives. Two lectures and one laboratory session per week. Prerequisite: 100.

Mr. Livdahl

Offered every other year

217 MARINE BIOLOGY/ Lecture, Field Trips

An introduction to plant and animal life in the oceans from the point of view of diversity, ecology, and evolution. Also included are the relationships of marine biology to the welfare of mankind. Prerequisite: 100.

Mr. Johansen

Offered every year

220 POPULATION BIOLOGY/ Lecture

Examines the properties that exist only at the population level, including schedules for birth and death, population growth patterns, spatial variation in abundance, genetic variation, and the factors that modify these features through time. Prerequisite: 117, 118, or permission of instructor.

Mr. Livdahl

Offered every other year

221 ANIMAL DEVELOPMENT/ Lecture, Laboratory

Consideration of the fundamentals of animal development with primary emphasis on the vertebrate embryo. Prerequisite: 121 or permission of instructor.

Mr. Lyerla

Offered every other year

222 SEMINAR IN COMMUNITY ECOLOGY

Factors affecting the biological structure of natural communities are examined, with close attention to field experiments on competition and predation. Prerequisite: permission of instructor.

Mr. Livdahl

Offered every other year

223 NEUROBIOLOGY/ Lecture, Laboratory

An introduction to vertebrate and invertebrate nervous systems, including anatomical, physiological and chemical aspects. Sensory, motor, and central systems are covered, with an emphasis on cellular mechanisms of function and on contemporary research. Prerequisite: *Introductory Chemistry*.

Staff

Offered periodically

225 ELECTRON MICROSCOPY/ Lecture, Laboratory

An introduction to the principles of electron optics, use of the electron microscope, preparation of specimens, and the techniques of electron microscopy applicable to biological investigations. Prerequisite: permission of instructor.

Mr. Curtis

Offered every year

228 MOLECULAR GENETICS/ Lecture, Seminar

Explores recent discoveries in the molecular genetics of prokaryotes and eukaryotes, with emphasis on new findings from recombinant DNA technology and DNA sequencing. Topics include protein synthesis, RNA transcription, gene regulation, repetitive DNA, gene cloning, split genes, gene families, transposable elements, oncogenes, and antibody gene rearrangement. Intended primarily for seniors and graduate students. Prerequisite: permission of instructors.

Ms. Comer, Mr. Lyerla

Offered every other year

231 RECOMBINANT DNA/ Laboratory

An introduction to gene cloning techniques. Students clone *Escherichia coli* DNA in a plasmid vector; specific experiments include DNA purification, restriction enzyme digestion, agarose gel electrophoresis, DNA ligation, bacterial transformation, genetic characterization of recombinants, restriction mapping, and DNA sequencing. Two laboratory periods per week. Prerequisites: 118; 109 or 270.

Ms. Comer

Offered every other year

232 SELECTED TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH/ Lecture, Student Presentations, Discussion

Content varies from year to year. For advanced undergraduate and graduate students who have completed 109 and at least one year of college-level chemistry. Permission of the instructor required.

Mr. Reynolds

Offered every year

235 ENVIRONMENTAL HEALTH/ Lecture, Discussion

Principles and approaches used during the management of selected problems in environmental health: risk assessment, environmental toxicology, drinking water standards, waste treatment practices and occupational health. Prerequisite: *permission of the instructor*. Students do not have to be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one of more of the basic sciences and a relevant background.

Mr. Reynolds

Offered every other year

238 ISSUES IN PUBLIC HEALTH/ Lecture, Discussion

Introduction to the principles and methods of study design with emphasis on epidemiology, followed by selected case studies illustrating approaches and problems associated with the resolution of policy questions in public health areas. Prerequisite: *permission of the instructor*. Students do not have to be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one or more of the basic sciences and a relevant background.

Mr. Reynolds

Offered every other year

240 ANIMAL PHYSIOLOGY/ Lecture, Laboratory

An introduction to the principles underlying physiological functions common to all living animals. Covers the subcellular, cellular, and organ levels of organization and places a primary emphasis on the integrative processes whereby all of the diverse organs and systems are oriented to the performance of the complete organism. Prerequisite: *Introductory Chemistry*.

Staff

Offered every year

247 SEMINAR IN NEUROPHYSIOLOGY

Discussion of selected readings on the principles of transmission, integration, and storage of information in neuronal pathways and other problems of nervous system function. Prerequisite: 223, 240, or permission of instructor.

Staff

Offered periodically

260 DIRECTED RESEARCH/ Laboratory

An advanced independent study for undergraduates of an approved topic under the direction of a departmental member. Prerequisite: permission of instructor.

Staff

Offered every year

261 DIRECTED READINGS/ Discussion

Advanced readings on an approved topic will be under the direction of a departmental member. Prerequisite: permission of instructor.

Staff

Offered every year

262 HONORS IN BIOLOGY

Readings and research for students in the honors program. Credit/no record only.

Staff

Offered every year

267 MIND IN EVOLUTION/ Seminar

A consideration of contemporary issues in the phylogeny and ontogeny of behavior in general and social behavior in particular. Refer to course description under Psychology 267.

Mr. Thompson

Offered every year

271 and 272 BIOCHEMISTRY/ Lecture, Laboratory

A two-semester course considering the basic principles and mechanisms of biochemical reaction in metabolic transformations of cell nutrients. The regulation of these processes by enzymes, genes, and hormones is considered. A laboratory component for the first semester acquaints students with methods and instrumentation of biochemical research, such as radioisotope techniques. The second semester covers advanced topics in biochemistry. Prerequisite: Chemistry 130.

Mr. Brink, Mr. Nelson

Offered every year

273 NEUROCHEMISTRY/ Lecture

Metabolic aspects of brain amines and biopolymers are considered in relation to neural function. Effects of drugs on memory processes are discussed in terms of biochemical mechanisms. Prerequisite: 271 or permission of instructor.

Mr. Brink

Offered every other year

277 BIOCHEMISTRY OF DISEASE/ Lecture, Discussion

Biochemical systems that are perturbed in metabolic regulatory processes as for example, in cardiovascular disease, hormonal imbalance (diabetes), and genetic defects (Tay-Sachs disease) are considered. The effects of environmental influences represented by drug and nutrient components are also treated. Prerequisite: Chemistry 130 or permission of instructor.

Mr. Brink

Offered every other year

278 PRINCIPLES OF PHARMACOLOGY/ Lecture

Acquaints the student or research worker with established principles of pharmacology with particular emphasis on the quantitative aspects of the interaction of chemical compounds or drugs with biological systems. The principal pharmacological actions of several important drugs are illustrated.

Mr. Brink, Mr. Nelson

Offered periodically

280 BIOMETRY AND EXPERIMENTAL DESIGN/ Lecture

Provides a background in the basic methods of data analysis for biologists, applications of mathematics to the description of biological phenomena, and the generation of testable hypotheses from models of biological processes. Prerequisite: at least one biology course beyond 100.

Mr. Livdahl

Offered every other year

300 READINGS AND RESEARCH IN BIOLOGY

Offered for variable credit.

Staff

Offered every year

310 SCIENTIFIC WRITING FOR GRADUATE STUDENTS/ Discussion

An introduction to the techniques of writing scientific papers. The principal assignment is the writing of a journal article and a detailed analysis of the steps involved. Related areas that are covered include searching the scientific literature, handling of quantitative data relevant to biological systems, and oral presentation of a scientific paper. Prerequisite: permission of instructor.

Mr. Ahmadjian

Offered every other year

315 SEMINAR IN LICHENOLOGY

A detailed, yet broad, treatment of lichens with discussion of recent theories concerning their evolution and development. Symbiotic interactions, ecology, growth, nutrition and metabolism, water relations, chemistry, and genetics are considered. Several local field trips and laboratory sessions to deal with aspects of taxonomy and morphology.

Mr. Ahmadjian

Offered periodically

325 SEMINAR IN CELL BIOLOGY

The fine structure and functions of subcellular organelles and macromolecules are discussed. Evidence for structure-function relationships obtained by a variety of physical and biochemical methods is considered, particular emphasis being placed on electron microscopic studies. Prerequisite: permission of instructor.

Mr. Curtis

Offered every other year

341 SEMINAR IN ENDOCRINOLOGY

Discussions focus upon current literature on the chemistry and biological actions of hormones. Integration of studies of the fine structure and biochemistry of endocrine glands and their target tissues is emphasized.

Mr. Curtis

Offered every other year

360 MASTER'S THESIS

Offered for variable credit.

Staff

Offered every year

Business/Management

See Department of Management.

Chemistry

DEPARTMENT FACULTY

Harry C. Allen Jr., Ph.D., *chair*: inorganic, physical
Daeg S. Brenner, Ph.D.: nuclear
Karen L. Erickson, Ph.D.: organic, natural products
Frederick T. Greenaway, Ph.D.: bioinorganic, physical
Alan A. Jones, Ph.D.: polymer, physical
Donald J. Nelson, Ph.D.: biochemistry, bioinorganic
Michael Novak, Ph.D.: physical organic, bioorganic
Edward N. Trachtenberg, Ph.D.: organic
Wen-Yang Wen, Ph.D.: coal conversion, physical, catalysis

PART-TIME FACULTY

Paul T. Inglefield, Ph.D.

AFFILIATES

Marcel Gut, Ph.D.
David Kupfer, Ph.D.
George E. Wright, Ph.D.

ADJUNCTS

John J. Brink, Ph.D.
Christopher P. Landee, Ph.D.

UNDERGRADUATE PROGRAM

The Chemistry Department offers an undergraduate program with the following goals in mind:

- 1) to provide a variety of course offerings that are consistent with the accreditation requirements of the American Chemical Society;
- 2) to offer a program that will prepare students for graduate work in chemistry and related fields;
- 3) to provide a strong scientific background for students planning careers in health-related professions;
- 4) to encourage students not majoring in science to obtain an overview of the impact of science on society.

The requirements for the chemistry major are two courses in calculus (Mathematics 120 and 121), two courses in physics (Physics 110 and 111 or preferably 112), and eleven courses in chemistry and related fields. These courses must include:

<i>Course</i>	<i>Number</i>
Introductory Chemistry I	101
Introductory Chemistry II	102
Organic Chemistry I	131
Organic Chemistry II	132
Environmental Chemistry	142
or Bioanalytical Chemistry	144
Instrumental Analysis	146
Inorganic Chemistry	150

Physical Chemistry I	160
Physical Chemistry II	162
or Biophysical Chemistry	164

The remaining two-course requirement is normally satisfied by advanced chemistry courses, one of which may be Chemistry 299.5, *Special Projects*, or Chemistry 299.8, *Honors*. On occasion, with permission from the department, the student may substitute an advanced-level course in biochemistry, computer science, mathematics, physics, or biology. In addition, at least six courses in a major's program must be taken from courses outside the fields of biology; biochemistry; computer science; chemistry; geology; mathematics; physics; environment, technology and society; and environmental affairs.

Students planning graduate study in chemistry are strongly urged to take Physics 112 rather than Physics 111. In addition to the stated requirements, it is recommended that students take Chemistry 200, 231, and/or advanced mathematics, physics, and biochemistry courses, depending on the area of interest. Computer courses are also recommended. All chemistry majors are encouraged to undertake independent research projects either as a candidate for honors (Chemistry 299.8) or in a special projects course (Chemistry 299.5) and may do so after completing Chemistry 132.

A student may elect as his/her first course in chemistry: Chemistry 10, 90, 98, 101, 102, or 131. Science majors normally start with Chemistry 101. The decision to start with Chemistry 102 or 131 (accelerating options) must be made in consultation with the department chair and may require taking a placement examination offered at the beginning of the academic year.

Students who fulfill the normal requirements will have their degree accredited by the American Chemical Society.

The department publishes an undergraduate handbook, *Chemistry at Clark*, which provides additional information. Copies are available at the departmental office.

HONORS PROGRAM

An honors degree program is offered for highly qualified majors. Students who want to enter this program must make a written application to the department chair prior to the beginning of their senior year. Participants are required to engage in an independent research project, participate in the departmental seminar program, and pass a set of comprehensive examinations. Further information about the program can be obtained from the department chair or the undergraduate handbook.

GRADUATE PROGRAM

The department offers programs leading to the degrees of master of arts and doctor of philosophy with specialization in various fields of chemistry. Emphasis is placed on tailoring programs to fit the specific needs and desires of the graduate student. To facilitate this goal, a committee of interested faculty works with each student to advise and review his/her progress in research work and, together with the student, defines the formal course work requirements. In the case of master's degree candidates, the requirements are essentially those of the University as stated elsewhere in the catalog. Up to one year's equivalent of teaching apprenticeship will be required of all candidates for advanced degrees.

In addition to formal course work, the student must pass qualifying and preliminary examinations, and the department language requirement must be met. For further details, students should consult the appropriate departmental publications.

Graduate scholarships, teaching assistantships, and research fellowships are available. Further information on these awards may be obtained from the department chair.

COURSES

10 TOPICS IN CONTEMPORARY CHEMISTRY/ Lecture

This relatively nonmathematical course is designed for students majoring in social science or the humanities and is intended to develop a qualitative feeling about chemistry as it relates to the modern world. Approximately half of the course is concerned with the development of modern chemical concepts; the remainder deals with current societal problems such as nuclear weapons and reactors, air and water quality, drugs, food additives, polymers, poisons, and others. In-class and final exams.

Staff

Offered every year

90 EVOLUTION OF CHEMICAL THOUGHT/ Lecture

Traces the development of chemical thought, concepts, and methods from the Classical world (Egyptian, Greek, Roman), through the Middle Ages and the European Renaissance to the modern world. Historical milestones leading to the development of the "scientific method" are discussed in detail. The course concludes with an examination of the impact of chemical technology on modern society. In-class and final exams.

Mr. Nelson

Offered every year

98 PRINCIPLES OF CHEMISTRY I/ Lecture, Demonstrations

The lecture portion of this course is identical to that of Chemistry 101. Instead of the laboratory, there is a one-hour demonstration/discussion session, and term papers replace lab reports. The course is not intended for science majors. In-class and final exams; term papers.

Staff

Offered every semester

99 PRINCIPLES OF CHEMISTRY II/ Lecture, Demonstrations

Continues Chemistry 98 and parallels Chemistry 102. Prerequisite: Chemistry 98 or 101. In-class and final exams; term papers.

Staff

Offered every semester

101 INTRODUCTORY CHEMISTRY I/ Lectures, Laboratory

Designed to meet the needs of science majors and the pre-med program as well as those seeking a rigorous introduction to chemistry as part of their liberal arts education. Introduces fundamental chemical concepts and applies them to a discussion of structure, bonding, and reactivity of molecules. A knowledge of high school algebra is necessary; high school chemistry and physics, although helpful, are not required. The laboratory teaches techniques of chemical experimentation and methods of chemical analysis. In-class and final exams, laboratory reports, and quizzes.

Staff

Offered every semester

102 INTRODUCTORY CHEMISTRY II/ Lecture, Laboratory

Continues Chemistry 101 with a discussion of thermodynamics, equilibrium theory, kinetics, electrochemistry, and the application of such theories to studies of structure and reactivity of molecules. The laboratory studies experimental techniques related to the lecture material. Prerequisite: Chemistry 101, advanced placement, or Chemistry 98 with permission

of instructor. In-class and final exams, laboratory reports, and quizzes.
Staff Offered every semester

131 ORGANIC CHEMISTRY I/ Lecture, Laboratory

Discusses the chemistry of carbon and its compounds. The structures and reactions of related classes of organic molecules are systematically studied with emphasis on reaction mechanisms and structural factors that affect reactivity. The laboratory concentrates on the preparation and physical, spectral, and chemical properties of these classes of compounds. Prerequisite: Chemistry 102 or advanced placement. In-class and final exams, laboratory reports, and exams.

Staff Offered every semester

132 ORGANIC CHEMISTRY II/ Lecture, Laboratory

Continues Chemistry 131 by studying more complex molecules and reaction mechanisms. Prerequisite: Chemistry 131. In-class and final exams, laboratory reports, and exams.

Staff Offered every semester

142 ENVIRONMENTAL CHEMISTRY/ Lecture, Laboratory

Focuses on chemistry related to environmental problems, with emphasis on aquatic chemistry and aquatic pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are conducted in the laboratory according to Environmental Protection Agency procedures. Prerequisite: Chemistry 102. In-class and final exams, laboratory reports.

Mr. Greenaway, Mr. Jones Offered every year

144 BIOANALYTICAL CHEMISTRY/ Lecture, Laboratory

This laboratory-oriented course presents both theoretical and practical aspects of quantitative analysis in biological systems. Topics discussed include chromatography, electrophoresis, immunochemistry, ultracentrifugation, absorption and fluorescence, enzyme analyses, and radioactivity counting procedures. Prerequisite: Chemistry 162. In-class and final exams, laboratory reports.

Mr. Brink, Mr. Nelson Offered every other year

146 INSTRUMENTAL ANALYSIS/ Lecture, Laboratory

Concentrates on instrumental techniques of analytical chemistry from both theoretical and practical points of view. Topics include electrochemistry, various types of spectroscopic analysis, chromatography, and electrophoresis. In the laboratory these techniques are used in the analysis of chemical samples. Prerequisites: Chemistry 142 or 144. In-class and final exams, laboratory reports.

Mr. Greenaway Offered every year

150 INORGANIC CHEMISTRY/ Lecture, Laboratory

Deals with theories of structure and bonding and their utility in explaining the chemistry of inorganic substances. Topics include molecular orbital, valence bond, and crystal field theories of bonding and examples of the use of these theories in explaining the structures and reactivities of inorganic molecules; acid-base theory, spectroscopic methods, and kinetics. Emphasis is placed on the interpretation of structure and reactivity in terms of basic molecular and atomic parameters. Prerequisite or corequisite: Chemistry 132. In-class and final exams, laboratory reports.

Mr. Greenaway Offered every year

160 PHYSICAL CHEMISTRY I/ Lecture, Laboratory

Covers the principles of physical chemistry as applied to gases, liquids, solids, and solutions. Much of the course is an introduction to the topic of chemical thermodynamics. The laboratory includes experiments in physical chemistry, the development of techniques of measurement and technical report writing. Prerequisites: Mathematics 120 and Chemistry 102. Prerequisite or corequisite: Chemistry 132 and either Physics 112 or a strong high school background in physics. In-class and final exams, laboratory reports.

Mr. Wen

Offered every year

162 PHYSICAL CHEMISTRY II/ Lecture, Laboratory

The topics covered in this continued discussion of physical chemistry are solutions of the Schrodinger equation for simple systems, atomic and molecular spectroscopy, magnetic resonance, solid state and X-ray diffraction, statistical thermodynamics, and chemical kinetics. In-class and final exams, laboratory reports.

Mr. Wen

Offered every year

164 BIOPHYSICAL CHEMISTRY/ Lecture, Laboratory

Refer to course description under Biochemistry 164.

Mr. Nelson

Offered every other year

200 PHYSICAL CHEMISTRY III Lecture

Essentially an introduction to quantum mechanics and covers elementary quantum-mechanical treatments of the structures of atoms and molecules. Prerequisite: Chemistry 162 or 164.

Mr. Allen

Offered every other year

210 PHYSICAL CHEMISTRY IV/ Lecture

Deals with the application of group theory to problems of chemical interest such as molecular vibrations, hybrid orbitals, and molecular orbital theory. Prerequisite: Chemistry 200 or permission of instructor.

Staff

Offered every other year

220 POLYMER SCIENCE/ Lecture

The physical chemistry of synthetic polymers will be presented including discussion of kinetic mechanisms of polymerization, molecular weight distributions, unperturbed dimensions, structure and conformation, viscosity, and dynamic properties. Specific experimental methods useful in polymer chemistry such as osmotic pressure, light scattering, gel permeation chromatography, viscoelastic response, nuclear magnetic resonance, and dielectric response also will be reviewed. Prerequisite: Chemistry 162 or 164.

Mr. Jones

Offered every other year

224 ENERGY AND COAL/ Lecture

This course will include the following topics: the general character of coals and their structures, coal chemistry, gasification principles, thermochemistry and thermodynamics, energy efficiency and utilization, reaction kinetics and catalysis, various gasifiers, liquefaction principles, solvent refined coals, advanced analytical techniques, and environmental considerations. In this course, energy considerations in relation to coal conversions will be emphasized. Prerequisite: Chemistry 132.

Mr. Wen

Offered irregularly

230 PHYSICAL ORGANIC CHEMISTRY Lecture

This is a lecture course on the fundamentals of organic chemistry including molecular structure, acidity and basicity, kinetics, and mechanisms with emphasis on the most recent advances in organic chemical theory. Prerequisite: Chemistry 132, 160, or permission of the instructor.

Mr. Novak, Mr. Trachtenberg

Offered every other year

231 ADVANCED ORGANIC CHEMISTRY/ Lecture

Provides a framework for students who wish to pursue an interest in organic chemistry beyond the normal two-semester sequence. Many important topics in modern organic chemistry which cannot be covered in depth in the first two semesters are studied. These topics include rearrangements and neighboring group effects, nonclassical ions, concerted reaction mechanisms, chemistry of important biological molecules including steroids, terpenes, and various cofactors. Important spectroscopic methods also will be discussed. These include advanced topics in proton magnetic resonance, carbon-13 magnetic resonance, and mass spectroscopy. Prerequisite: Chemistry 132.

Staff

Offered every other year

232 ADVANCED ORGANIC CHEMISTRY/ Lecture, Laboratory

This course is the same as Chemistry 231 except that there is an additional four-hour lab each week where experiments related to the lecture material are performed. This is offered for 1-1/2 credits.

Staff

Offered every other year

233 ORGANIC CHEMISTRY OF BIOMOLECULES/ Lecture

Emphasizes the synthesis, proof of structures, reactions, and reaction mechanisms of important classes of molecules playing significant biological roles. Topics discussed will be the carbohydrates, fats, proteins, and cyclic ureides, including the pyrimidines and purines of importance in drugs and nucleic acids. A selection of other molecules from the steroids, alkaloids, and terpenoids also will be discussed briefly. Prerequisite: Chemistry 132.

Mr. Trachtenberg

Offered every other year

235 NATURAL PRODUCTS/ Lecture, Optional Laboratory

The structure, synthesis, and chemistry of selected secondary metabolites including steroids, terpenoids, alkaloids, and actogenins of both terrestrial and marine origin are discussed. Biogenetic theory is used extensively to emphasize the simplicity within the complexity of these natural products. An optional four-hour laboratory per week is also available. Prerequisite: Chemistry 132.

Ms. Erickson

Offered every other year

239 BIOORGANIC CHEMISTRY/ Lecture

Deals with the chemistry involved in some biologically important reactions, particularly acyl and phosphoryl group transfer reactions, and oxidation-reduction reactions. Information from *in vivo* and *in vitro* studies of biological systems will be coordinated with knowledge developed from model studies with small molecules in an attempt to develop a cohesive picture of the chemical mechanisms of these biological reactions. The type of information that can be obtained from kinetic studies, isotopic substitution, transition state analogs, inhibition studies, model studies, etc. will be discussed. An in-depth discussion of the factors involved in enzymic

catalysis is an important part of this course. Other topics include the biosynthesis of terpenes and steroids, and the chemistry of various cofactors including flavin, heme, biotin, etc. Prerequisite: Chemistry 132.

Mr. Novak

Offered every other year

242 NUCLEAR SCIENCE/ Lecture, Laboratory

This course covers the fundamentals of nuclear chemistry and physics: production, isolation, identification, and measurement of radioactive atoms. Prerequisite: permission of the instructor.

Mr. Brenner

Offered irregularly

248 ENGINEERING AND CHEMISTRY/ Lecture

Gives students some exposure to the principles of chemical engineering and the application of these principles to industrial processes. Topics covered include reactor design, mass and heat transfer, nonideal flow, mixing of fluids, diffusion, noncatalytic fluid-solid reactions, fluidization, heterogeneous catalysis, and surface chemistry. Prerequisite: Chemistry 132.

Mr. Wen

Offered irregularly

250 ADVANCED INORGANIC CHEMISTRY/ Lecture

Extends the concepts discussed in Chemistry 150 and places them on a more quantitative theoretical basis. Prerequisites: Chemistry 150 and 162 or permission of instructor.

Mr. Greenaway

Offered irregularly

252 CHEMICAL KINETICS/ Lecture

This course extends basic theories of kinetics of reactions and discusses the major methods of studying reaction kinetics. Prerequisite: Chemistry 162 or 164.

Mr. Greenaway

Offered irregularly

262 ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY/ Lecture

This course is designed as an introduction to the theory and application of EPR as a probe of structure and reactivity. Theoretical concepts are discussed in a manner that does not require a knowledge of quantum mechanics, though a rough and basic knowledge of chemistry is required. The course is designed to be suitable also for biology and physics majors. Prerequisite: permission of the instructor.

Mr. Greenaway

Offered irregularly

271 BIOCHEMISTRY I/ Lecture, Laboratory

272 BIOCHEMISTRY II/ Lecture

Refer to course descriptions for Biochemistry 271 and 272. Also listed for credit as Biology 271 and 272.

Mr. Brink, Mr. Nelson

Offered every year

275 PROTEIN CHEMISTRY/ Lecture

Refer to course description for Biochemistry 275.

Mr. Nelson

Offered every other year

278 PRINCIPLES OF PHARMACOLOGY/ Lecture

Refer to course description for Biology 278. Also listed for credit as Biochemistry 278.

Mr. Brink, Mr. Nelson,
Mr. Wright

Offered every other year

290 SPECTROSCOPY/ Lecture

This course deals with the application of the most widely used forms of spectroscopy in the laboratory. Topics include NMR, EPR, IR, UV, visible, Raman, fluorescence, and photoelectron spectroscopy, mass spectrometry, and other techniques, as time permits. Emphasis will be placed on giving the student the practical knowledge necessary to operate spectroscopic instrumentation. Prerequisite: Chemistry 162 or 164.

Mr. Novak

Offered every other year

299.5 SPECIAL PROJECTS/ Laboratory, Discussion

Individual investigations which involve laboratory and/or literature research. Offered for variable credit. Prerequisite: permission of instructor.

Staff

Offered every semester

299.8 HONORS COURSE/ Laboratory, Discussion

Primarily for majors seeking departmental honors in chemistry. Involves a laboratory research project and participation in departmental seminars. Offered for variable credit. Prerequisite: permission of department chair.

Staff

Offered every semester

300 RESEARCH/ Laboratory

Offered for variable credit.

Staff

Offered every semester

322 THERMODYNAMICS/ Lecture

Discusses applications of the three laws of thermodynamics to chemical systems.

Mr. Wen

Offered irregularly

323 STATISTICAL MECHANICS/ Lecture

Treats statistical mechanics as a bridge between molecular properties and thermodynamic functions, as applied to chemical systems.

Mr. Wen

Offered every other year

333 SYNTHETIC ORGANIC CHEMISTRY/ Lecture

The synthesis of organic compounds is discussed. Topics include the scope and limitations of general methods, mechanistic aspects, and stereochemistry. Special emphasis is placed on the total synthesis of natural products from design of methods to execution. Three lectures per week. Prerequisite: Chemistry 132.

Ms. Erickson

Offered irregularly

344 SELECTED TOPICS IN ADVANCED NUCLEAR CHEMISTRY/ Lecture

Discusses current experimental and theoretical literature in nuclear reactions, fission, and nuclear spectroscopy. Prerequisite: Chemistry 242 or permission of instructor.

Mr. Brenner

Offered irregularly

350 SEMINAR

Consists of reports on research and discussions of recently published work. Not offered for credit.

Guest Lecturers, Staff, Graduate Students

361 MOLECULAR STRUCTURE/ Lecture

This course concerns physical methods relevant to the determination of molecular structure and the characterization of molecular motion. Several methods will be discussed although the emphasis will be on magnetic resonance.

Mr. Jones

Offered every other year

379 SPECIAL TOPICS/ Seminar

Consists of research and literature reports by graduate students and undergraduate honors candidates.

Staff

Offered every semester

380 RESEARCH CONFERENCE/ Seminar

Consists of informal reports of research work being done in the laboratory. Not offered for credit.

Staff, Graduate Students

Offered every semester

Classics

PARTICIPATING FACULTY

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, Classical mythology, Classical art and archaeology, ancient history

Classics includes courses in the Classical Greek and Latin languages and, in English, the culture and history of the Greek- and Latin-speaking peoples of the ancient Mediterranean. Classics courses are recommended to students as part of their general education and to majors in comparative literature, English, foreign languages and literatures, fine arts, history, music, and philosophy. Although there is no departmental major in classics, students interested in pursuing the study of the ancient Greco-Roman and Judaeo-Christian roots of Western civilization are directed to the interdisciplinary and interdepartmental Program in Ancient Civilization.

COURSES

A. GREEK

101/102 INTRODUCTORY GREEK/ Lecture, Discussion

A beginner's course in the language of Classical Greece. The course covers the grammar and syntax of the ancient Greek language with the goal of enabling students to read, in the second semester, selections from ancient Greek texts. Course readings, in Greek, may include philosophical works such as Plato's *Apology of Socrates* and *Crito*, or selections from Homer, Herodotus, and the New Testament, depending on class interests. Indivisible course.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE GREEK/ Lecture, Discussion

A reading course in Classical Greek literature. The course begins with a rapid review of Greek grammar but consists largely of reading and discussion of an appropriate Greek literary text. Course content varies depending on student interest but typically consists of a Greek tragedy such as Sophocles' *Oedipus the King* or selections from Homer's *Iliad* or *Odyssey*. Prerequisite: Greek 101/102 or equivalent background in the language. Available as a directed reading by arrangement with the instructor.

Mr. Burke

Offered every year

B. LATIN**101/102 INTRODUCTORY LATIN/ Lecture, Discussion**

A beginner's course in the Latin language including, in the first semester, an introduction to the grammar and syntax of Latin with appropriate attention to Latin's role as parent to the Romance languages and source of much of the vocabulary of modern English. The second semester will be primarily devoted to reading selections from suitable Latin texts such as the lyric poetry of Catullus or Horace, the historical works of Julius Caesar or Livy, the Vulgate Bible, or selected medieval texts. Indivisible course.

Mr. Burke

Offered every other year

103/104 INTERMEDIATE LATIN/ Lecture, Discussion

A reading course in the Latin language. The course begins with a rapid review of Latin grammar but consists primarily of reading and discussion of appropriate Latin texts. Course content will vary depending on class interest but could include, for example, selections from Vergil's *Aeneid*, Ovid's *Metamorphoses*, Latin historical works or selections from the Latin church fathers. Prerequisite: Latin 101/102 or equivalent background in the language. Available as a directed reading by arrangement with the instructor.

Mr. Burke

Offered every year

C. CLASSICS COURSES TAUGHT IN ENGLISH**110 ANCIENT GREEK ART AND ARCHITECTURE**

Refer to course description under Art History.

Mr. Townsend

Offered every other year

111 ROMAN ART AND ARCHITECTURE/ Lecture, Discussion

A survey of the artistic and architectural accomplishments of ancient Rome and of the many peoples who made up the Roman Empire, beginning with the origins of Rome in Bronze Age central Italy. The course treats Roman relations with Etruscans, Greeks, and other nonLatin-speaking peoples as these interactions manifest themselves in Roman art and architecture. The course will conclude with an examination of the effect of Judaeo-Christian values on the formerly pagan Empire, the appearance of a Christian Roman government, and the development of distinctively Christian forms of Roman art and architecture. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHAEOLOGY/ Lecture, Discussion

A general introductory survey of ancient Greek culture and history covering: the Bronze Age civilizations of Crete and Mycenae, the classical Greek

city-states, the conquests of Alexander, and the emergence of international urban culture in the Mediterranean world. Readings in the works of ancient authors will be chosen to demonstrate cultural and intellectual life, political developments, social and family structure, and religion. Many lectures, such as those on art, architecture, and archeology, will be illustrated by slides. Also listed for credit as History 121. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

124 INTRODUCTION TO CLASSICAL MYTHOLOGY/ Lecture, Discussion

A study of ancient Near Eastern, Greek, and Roman literary texts (along with some modern ones), which are particularly useful for gaining an understanding of the function of myth in Greco-Roman antiquity as a vehicle for artistic communication and social commentary. The archeological and anthropological background of the ancient world are sketched in, and the religious and philosophical implications of myth are discussed. The course pays particular attention to the influence of ancient mythology on later European culture, especially literature and art. Various modern approaches to myth analysis (structural, psychoanalytical, and literary) are touched upon. Many of the lectures are illustrated by slides. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

135 CLASSICAL GREEK TRAGEDY/ Lecture, Discussion

A survey of tragic drama in Classical Greece. The course treats the distinctive role of drama in ancient Greek society, staging and production of Classical tragedy, and problems of interpreting the texts of plays (in translation) by Aeschylus, Sophocles, and Euripides. The course also pays appropriate attention to mythology as the primary subject of Greek tragedy. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

150 NARRATIVE IN ANCIENT HISTORICAL WRITING/ Seminar, Discussion

A survey of ancient modes of writing and interpreting history. By reading selected works of ancient authors in translation, students examine: narrative and stylistic technique, rhetoric, character portrayal, propaganda and reliability, the manipulation of events for artistic purposes, the effect of the author's intent on his work, and the presence or intrusion of the author's personality. Requires reading, in translation, of selections from Herodotus' *History*, Thucydides' *History of the War between Athens and Sparta*, Plutarch's *Lives*, Josephus' *History of the Jewish War*, and Tacitus' *Annals and Histories*. Reference will also be made to Old and New Testament ideas of patterns and purpose in history and to poetic treatments of history by authors such as Homer and Vergil. Also listed for credit as History 150. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD/ Lecture, Discussion

A historical and cultural survey of the complex and tumultuous period between the foundation of the Roman Empire and the sixth century A.D. when medieval culture was established in Europe. Two themes dominate the course: (1) the struggle between pagan or classical modes of thought

and Judaeo-Christian beliefs and values, and the assimilation of each in the other; (2) the tension within the Christian movement between spiritual and practical concerns as the new religion came to dominate Western culture. The interaction of Greco-Roman, Jewish, and Christian cultures is approached by reading ancient authors in translation, by studying appropriate secondary sources, and by examining representative samples of the visual arts of the period in lectures illustrated by slides. Also listed for credit as History 160 and Judaic Studies. One mid-term, one term paper, final examination.

Mr. Burke

Offered every other year

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT

Refer to course description under Geography.

Mr. Koelsch

Offered every other year

Communications

PRINCIPAL ADVISERS

Albert A. Anderson, Ph.D., *chair*, Communications Concentration Committee

Charles Blinderman, Ph.D.

Walter Schatzberg, Ph.D.

Communications studies at Clark is carefully integrated with our liberal arts curriculum. Students interested in exploring any aspect of the communications field can select from more than fifty courses, taught by an interdisciplinary faculty. A current list of courses can be obtained from the principal advisers.

The communications concentration is designed to assist students in structuring individual programs appropriate to their needs and interests. A list of sample programs is available from the principal advisers. This list has been developed to help the student select a program that best supplements his/her major. For example, a student interested in a journalism career may choose to major in English and concentrate in communications with an emphasis upon visual studies. A student interested in becoming a screenwriter could major in screen studies and concentrate in communications with a focus on writing. A student preparing for graduate study may concentrate in screen while majoring in French, German, or Spanish (thus combining literature, film/video, and criticism. Rather than narrow specialization in a technical field, the Clark communications concentration seeks to nurture an understanding of the general principles of communication and fundamental skills in visual and verbal thinking.

Each student is expected to register for an internship in an agency or organization directly related to the field of communications such as a newspaper, radio, or television station, graphic design firm, advertising agency, theater company, museum, gallery, public relations firm, charitable or educational foundation, etc. In some cases the student may choose an on-campus internship (such as working in the Clark Communications Office, Little Center Gallery, Clark Center for Contemporary Performance; assisting a professor or staff member in research, writing, or teaching; or participating in Clark's Teaching Apprentice Program, which is open to students from all major fields).

To concentrate in communications, students must complete the following:

1. A major in any of the disciplines (English, foreign languages and literatures, and visual and performing arts are the most common)
2. Two required courses: *Principles of Communication* and an *Internship*
3. Four additional courses selected in consultation with one of the principal advisers.

REQUIRED COURSES

IDND 135 PRINCIPLES OF COMMUNICATIONS/ *Lecture, Discussion*

An introduction to the communications concentration, which provides an elementary but comprehensive survey that may be pursued in greater depth in subsequent courses. Students explore both the theory and practice of communication in all of its major aspects: visual communications, oral and written language, and performance.

Staff

Offered every year

299.9 INTERNSHIP

Staff

Comparative Literature

PARTICIPATING FACULTY

Michael K. Spingler, Ph.D., *program director*: French theater and film, comparative drama, translation

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology

Marvin A. D'Lugo, Ph.D.: Hispanic literature and film, narrative theory

William Ferguson, Ph.D.: Spanish Golden Age literature, twentieth-century Hispanic literature, Spanish literature

Kenneth Hughes, Ph.D.: German and Russian language, nineteenth- and twentieth-century German and Russian literature, comparative literature

Kartmut Kaiser, Ph.D.: German language and literature, German romanticism, the fairy tale, relations between music and literature

Dorothy Kaufmann-McCall, Ph.D.: French feminism, Sartre and existentialism, European novel

J. Fannin King, M.A.: medieval literature, French theater, Philosophy in literature, the enlightenment

Gale H. Nigrosh, Ph.D.: sociolinguistics, the theory and practice of foreign language teaching, the development of written discourse

Leo Ortiz-Minique, M.A.: translation, international academic exchanges, study programs in Spanish speaking countries

Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations of literature and science

ADJUNCT FACULTY

Martyn J. Bowden, Ph.D.

John Conron, Ph.D.

Wesley M. Fuller, M.Mus.

Bernard Kaplan, Ph.D.

Philip Rosen, Ph.D.

UNDERGRADUATE PROGRAM

The Major in Comparative Literature: Program Description

Comparative Literature offers the student a program of studies in the formation and development of the Western mind as it is expressed through poetry, prose, drama, film, and related arts. Offered by the Department of Foreign Languages and Literatures, the program is by nature interdisciplinary and has strong ties with several other departments in the University. In addition to the core of courses offered by the department in comparative literature and literatures in foreign languages (French, German, Hebrew, Russian, and Spanish), the student is encouraged to take courses in English, humanistic geography, psychology, and visual and performing arts. One of the particular aspects of the program is a working approach to the text combined with a critical approach. This may take the form of play production; seminars in the translation of lyric poetry and drama; and supervised work in the contemporary theory of the relationship between text, performance, and spectator positioning response.

The curriculum in comparative literature has five components:

1. *Foundation Courses:* These courses, which are, primarily, part of the college's Program of Liberal Studies, focus on the traditions and sources of our culture. Foundation courses stress the relationship between the literature of the modern period and that of the classical, medieval, and Renaissance periods.
2. *Courses in cultural narrative:* These are courses in literature, film, drama, and related arts, including courses given in the foreign language of a given country. The general concern of these courses is a study of the ways in which literature, film, and drama shape the way we perceive ourselves and the culture in which we live. Of particular importance in this group are courses in the aesthetics, criticism, and theory of narrative, film, and drama as well as courses exploring the relationship between literature and philosophy, literature and politics, literature and psychology, and literature and fine arts.
3. *Cluster courses in advanced topics:* These are courses normally offered to juniors and seniors. In most cases they are interdisciplinary clusters offered either in cooperation with the Program for Humanistic Studies or by faculty within the Department of Foreign Languages. Examples of possible cluster themes are: "American Space and its European Roots," "Centers of Creativity (Berlin, Madrid, Paris, and Vienna)," and "The European Imagination Between the Wars: Dada, Expressionism, and Surrealism." Cluster themes vary from year to year. We expect that these courses will lead to the definition of capstone projects for the major.
4. *Capstone projects:* Advanced work done independently by individual students with the supervision and approval of comparative literature faculty. A capstone project could include a senior thesis, a translation of a literary work, or work in foreign language play production.
5. *The Comparative Literature Colloquium:* The colloquium serves as the center within which students and faculty of the Comparative Literature Program meet to discuss the progress of capstone projects and the development of themes for future cluster courses. It is primarily a place for the sharing of ideas and perspectives that may originally have developed within the context of a particular discipline or research topic. The colloquium frequently invites guests from outside the University, as well as from other Clark departments, to make presentations and lead discussions.

PROGRAM REQUIREMENTS

See Comparative Literature major requirements under Foreign Languages and Literatures.

COURSES

110 PROBLEMS IN COMPARATIVE LITERATURE/ Lecture, Discussion

An introductory course in comparative studies of literature from a problem-oriented perspective. The course revolves around five major issues:

- 1) The Tragic View
- 2) The Challenge of Faith
- 3) Man the Measure
- 4) The Search for Identity
- 5) The Aesthetics of Ambiguity

Readings include selections from Sophocles, Job, Pico, Pascal, Pope, Nietzsche, Mann, Hofmannsthal, Rilke, Hesse, Kafka, Joyce, Bernanos, Beckett, and Cortazar. Recommended for freshmen and sophomores.

Mr. Schatzberg

Offered every other year

118 MASTERPIECES OF WORLD LITERATURE/ Lecture, Discussion

A broadly based humanities course, which surveys the development of European literature and thought. Texts to be considered, in English translation, have been chosen to illustrate some of the most important stages in the evolution of the Western mentality. The course is jointly taught, with contributions from faculty members from classics, English, philosophy, and theater arts. Readings during the fall semester include selections from Homer's *Odyssey*, the Old Testament, Plato's *Dialogues*, classical Greek tragedians, Vergil's *Aeneid*, Petronius's *Satyricon*, and Dante's *Inferno*.

Mr. Burke

Offered every other year

119 MASTERPIECES OF WORLD LITERATURE/ Lecture, Discussion

Carries forward from the Renaissance the study of major literary works in the context of the various stages of the civilization that produced them. Readings include selected works from Petrarch, Cervantes, Shakespeare, Molière, Voltaire, Goethe, Byron, Shelley, Melville, Conrad, and Eliot.

Mr. Schatzberg

Offered every other year

120 THE EPIC JOURNEY/ Lecture, Discussion

A comparative and cross-cultural examination of the epic as a recurring literary form. Special attention is paid to the various forms and functions of the hero's journey. Epic journeys may or may not have goals that are clear to the hero; they may be wanderings in unknown parts of the physical world, or they may be representative of various types of spiritual striving and trial. Our task is to define and articulate the various types of epic voyage and to relate their differences and similarities to the values of the societies which gave rise to them. Included in the term's reading are selections (in English translation) from Homer's *Odyssey*, Vergil's *Aeneid*, Apollonius's *Argonautica* and Apuleius's *Ass*.

Mr. Burke

Offered every other year

121 SURVEY OF INTERNATIONAL FILM MOVEMENTS

Refer to course description under Screen Studies 121.

Mr. Rosen

130 LITERATURE AND THE NATURE OF MAN. PART I/ Lecture, Discussion

The course is designed to serve the student by providing him with an opportunity to investigate ideas held by outstanding literary artists of the Western World concerning the nature of man and his relation to the universe. The works are also to be studied as representative of the cultures of which they are products. The course is planned not only to introduce the student to a body of knowledge and experience held in common by educated men and women in our society but also to help him to clarify his thinking about basic problems and to develop attitudes that are both humane and creative. A discussion course limited to fifteen students (with an introductory lecture in each section) including the following segments: The ancient Greek and modern French treatment of the *Antigone* theme; *Dante's Divine Comedy*; Montaigne's *Essays*; the French classical view, Corneille-Racine. To be followed in the spring semester by similar discussion of works up to the present.

Mr. King

131 LITERATURE AND THE NATURE OF MAN. PART II/ Lecture, Discussion

A continuation of Comparative Literature 130. The following segments will be presented for discussion: French classical comedy, Molière; The Enlightenment, Voltaire; Goethe's *Faust*; a twentieth-century perspective, T.S. Eliot, *The Wasteland* and other poems. Limited to 15.

Mr. King

140 CITIES AND CULTURE

Refer to course description under Geography 140.

Mr. Bowden

145 THE ANCIENT NOVEL

Refer to course description under Classics 145.

Mr. Burke

149 AESTHETICS

Refer to course description under Visual and Performing Arts.

Mr. Anderson

150 MODERN GERMAN CINEMA

Refer to course description under German 150.

Mr. Schatzberg

155 STUDIES IN ITALIAN FILM: NEOREALISM/ Lecture, Discussion

Explores the political, cultural, and aesthetic role of Neorealist cinema in Italy. The linkage between film, history and nationality during the years 1942-1951 directs us to broader questions concerning the relations between art and politics in fascist, *Resistenza*, and contemporary Italian culture. In addition to film texts and selections from the controversial critical debate over Neorealism in film and cultural history, we consider both precursors and inheritors of Neorealist cinema.

Ms. Butzel

Offered every other year

160 FRENCH AND SPANISH CULTURE SEEN THROUGH CINEMA/ Lecture, Discussion

The cinematic medium has been considered both as a reflector of cultural values and as a formulator of them. This seminar explores the ways in

which film culture has evolved in France, Spain, and Spanish America and the means through which a critique of social customs and values has been formulated. Screenings compare the similarities and differences of approach by various French and Spanish language filmmakers over the last half century. Emphasis is given to the political implications of cinema as a catalyst for social change. Attendance at ten screenings of exemplary French and Spanish films is required.

Mr. D'Lugo, Mr. Spingler

Offered every other year

165 ELEMENTS OF DRAMA: SCRIPT, STAGE AND AUDIENCE/

Workshop

A workshop course that uses scene work as a critical approach to the text. The basic premise of the course is that the varied meanings of the script may be elaborated, extended, and altered through performance. Texts are chosen to illustrate a variety of major figures, periods, and styles: Greek tragedy, Molière, Shakespeare, realism, and the contemporary avant-garde. Throughout the course the particular perspectives of playwright, director, actor, and spectator are emphasized.

Mr. Spingler

Offered every other year

168 MUSIC IN GERMAN LITERATURE AND THOUGHT

Refer to course description under German 168.

Mr. Kaiser

169 PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE

Refer to course description under Psychology 169.

Mr. Kaplan

172 EUROPEAN ROOTS OF AMERICAN SPACE: THE CROSS-ATLANTIC EXPERIENCE

Refer to course description under Geography 172 or English 172.

Mr. Bowden, Mr. Conron

175 LITERATURE AND EXISTENTIALISM/ Lecture, Discussion

An introduction to major writers and themes of existentialism from Dostoyevsky, Kierkegaard, and Nietzsche to Sartre, Camus, and Beckett. Beginning with a study of the cultural origins of existentialism as a distinctively modern, European sensibility, we explore why and how existentialist thought has found expression with unique appropriateness as both philosophical literature and literary philosophy. Prerequisite: permission of the instructor.

Ms. Kaufmann-McCall

Offered every other year

192 LANGUAGE IN SOCIAL CONTEXT

Refer to course description under Linguistics and Language Learning.

Ms. Nigrosh

Offered every year

193 INTERPRETATIONS OF DREAMS

Refer to course description under Psychology 193.

Mr. Kaplan

197 THE FAUST THEME IN LITERATURE AND MUSIC

Refer to course description under German 197.

Mr. Kaiser

240 STUDIES IN NARRATIVE FORM: CLUSTER COURSE/ Lecture, Discussion

An exploration of narrative both structurally and historically with an emphasis on literary fiction as a particular kind of narrative form. We follow the evolution of narrative in Western literature through the aesthetics of realism and modernism, as they have been elaborated in fiction and critical theory. The relevance of nonliterary narrative to the understanding of fiction also is discussed. Texts include both novels and films.

Mr. D'Lugo, Mr. Conron

Offered every other year

251 SEMINAR IN LITERARY CRITICISM/ Seminar

Seeks to develop critical sensibilities by concentrating on three major modes of literary criticism: textual, psychoanalytic, and Marxist. We read and discuss both original sources (Freud, Marx, and others) and a wide range of criticism based on their methods. An attempt is made to demonstrate that a complete critical engagement with a literary work must start from a close examination of the text itself, proceed to a consideration of the interaction between text and the author's life and mind, and from there, to an investigation of the social setting that conditions text, life, and mind. In order to unify discussion and development, the seminar centers around a thorough critical occupation with the works, life, and society of Franz Kafka. Primary material includes his short stories, his novel *The Trial*, *Letter to His Father*, and *Letters to Milea*.

Mr. Hughes

Offered every other year

276 SYMBOLISM IN EVERYDAY LIFE: MYTH, DREAM AND SYMBOL

Refer to course description under Psychology 276.

Mr. Kaplan

277 THE CREATIVE PROCESS

Refer to course description under Psychology 277.

Mr. Kaplan

Computer Science

An undergraduate major in computer science is currently offered in the Department of Mathematics and Computer Science. Requirements for this major are discussed in the listings for that department.

Students who are not candidates for the major in computer science, but who want to take a course concentration in computer science, should consult the mathematics and computer science listings for specific course offerings. All interested students are urged to consult members of the Department of Mathematics and Computer Science for help in course selection.

Economics

DEPARTMENT FACULTY

Frank Puffer, Ph.D., *chair*: regional economics, African economic development, health economics

David Altig, A.B.D.: monetary and macroeconomic theory

Stephen Baker, D. Phil.: international economics

Wayne B. Gray, Ph.D.: labor economics, econometrics, microeconomic theory

Alice M. Hughey, Ph.D.: resource economics, microeconomic theory

Robert C. Hsu, Ph.D.: economic development, comparative economic systems, international economics

Howard W. Nicholson, Ph.D.: history of economic thought, economic methodology, accounting, investment, corporate finance

Attiat F. Ott, Ph.D.: economic theory, public finance, health economics

Don M. Shakow, Ph.D.: Marxist economics, resource and energy economics, econometrics

Roger C. Van Tassel, Ph.D.: international trade and finance, public economy

E.C.H. Veendorp, Ph.D.: microeconomic theory

Maurice D. Weinrobe, Ph.D.: monetary economics, economics of housing

UNDERGRADUATE PROGRAM

The undergraduate program is designed to give the student a comprehensive grasp of the underlying principles and functions of economic institutions and to develop habits of systematic thought.

Goals of the Major

The rationale for economics majors can be stated briefly and simply: We believe economics offers a useful insight into a better understanding of fundamental human behavior in the decision-making process and in a great variety of national issues. While we recognize that economics alone seldom gives answers, we also feel that there are few issues, at least in the social sciences, in which the contribution of fairly formal economic analysis does not play a necessary role. There are obviously some advantages in an economics major besides a more broadly accepted educational value. It is a good preparation for law, business, and a number of other professional and non-professional careers. However, the emphasis of our program (and its rationale) is the educational one. The major in economics is clearly devised to help the student think and develop.

Economics 10, *Issues and Perspectives*, is prerequisite for all 100-level courses and for Economics 11, *Principles of Economics*. Economics 11 is prerequisite for 200-level courses in the department. All majors in economics must take Economics 10, Economics 11, Econ 160 *Statistics*, and Econ 205.1, and 205.2, *Intermediate Theory*. A 2.0 grade point average in these core courses is required for credit towards the major. Students are expected to take no less than twelve courses and no more than nineteen courses in economics and courses appropriate to their track. In addition, all majors may have a department adviser to assist in developing a program of study. Within the tracks, students may elect a variety of options. These options are built on a common core of analysis required of all majors and extend to include a coherent program of courses offered within the department and in related departments. The options are: economics professional, business, prelaw, and the expanded major. Students should

refer to the Undergraduate Economics Handbook for further information regarding requirements.

The department offers two separate honors programs. Selected students may engage in independent study off-campus for a semester and summer, preferably during the junior year. These students work for business firms or government agencies in applied economic research. A semester's credit is awarded. In addition there is an on-campus program. Juniors in their second semester take an honors course and, as seniors, may continue and complete the honors program with the writing of a senior thesis.

Some courses may be offered only in alternate years.

GRADUATE PROGRAM

The University offers facilities for graduate study and research leading to the doctor of philosophy in economics.

Graduate students may elect to take a limited amount of work in related courses offered by other departments.

Scholarships and fellowships are available for a limited number of well-prepared students. These appointments exempt their holders from tuition fees and some carry stipends in varying amounts. Several teaching assistantships are also awarded, which enable graduate students to gain experience in undergraduate instruction. These carry remission of tuition and a cash payment, currently up to \$5,000 for part-time work.

An Earhart Foundation Scholarship is awarded every year to an outstanding candidate selected by the Earhart faculty sponsor. The award carries a full tuition plus \$4,000 cash stipend. No teaching responsibility is attached to the award. An extra \$1,000 is also given to the Earhart fellow for part-time research bringing the cash award to \$5,000.

Two full academic years of graduate work, or its equivalent in part-time work, are necessary for admission to Ph.D. candidacy. One of these years must be spent in residence at Clark University. "In residence" is broadly defined as work done at Clark University under the immediate, personal supervision of at least one member of the University faculty.

All candidates for the Ph.D. in economics are required to demonstrate proficiency in econometrics and mathematical economics, i.e., by passing designated courses offered in the department or, in the case of prior preparation, by passing a test given by the department.

Each student in the Ph.D. program is required to demonstrate proficiency in economic theory. The economic theory requirement includes micro-theory, macro-theory, and the history of doctrine. Use of mathematics may be required in the examination in economic theory. The student meets the economic theory requirement by satisfactory completion of the theory courses and by passing a six-hour preliminary examination.

Upon completion of economic theory and the required special fields, the student is admitted to candidacy for the Ph.D. These fields may be selected from among the following: monetary economics, public finance, industrial organization, international trade, comparative economic systems, advanced theory, regional economics, or one field selected from related subjects. If advanced theory is selected as a special field, the level of performance required is substantially higher than the general requirement in economic theory for all Ph.D. candidates. The choice of fields must be cleared in advance with the graduate student adviser. Not all graduate field courses are offered each year. At least two field courses are offered annually. Typically, two fields are taken during the second year, and the remaining field requirements are completed, along with beginning the dissertation, during the third year.

Soon after having completed the field requirements, each student is expected to develop a written prospectus of his/her dissertation and then to make a presentation at an informal conference with the dissertation committee demonstrating both the extent of knowledge of his/her dissertation field and the feasibility of the proposed topic.

Upon completion of the dissertation in a form acceptable to the committee, the candidate makes a copy of the dissertation available to the department, the staff, and graduate students in the department. After a period of approximately two weeks, to permit a wider reading of the dissertation within the department, the candidate presents the dissertation at a seminar open to all staff and graduate students in the department. Final approval of the dissertation is granted by the committee after consideration of any suggested changes or challenges arising from the final seminar. Unless the dissertation is completed and defended within five calendar years from admission to candidacy, the certifying examinations must be taken again.

The dissertation must be a real contribution to knowledge, based upon independent research, convincingly presented, and acceptably written. Published articles may be accepted by the department instead of a dissertation.

Some teaching and research experience at Clark, or other such teaching and research as the department may regard as equivalent, is prerequisite to the doctor's degree.

Students enrolled in the Ph.D. program may be awarded the M.A. degree upon satisfactory completion of a two-year residency and preliminary exam. In the case of students who do not continue toward the Ph.D., the M.A. may be awarded upon satisfactory completion of twelve required courses or one-year residency, a M.A. thesis and an oral exam.

A student should discuss his or her plans with the graduate student adviser on or before registration day and secure approval of his or her course program.

INSTITUTE FOR ECONOMIC STUDIES

The Institute for Economic Studies, funded with an initial grant from the John M. Olin Foundation, began its operation in January 1980. The institute's main objectives are to:

1. research significant economic issues and propose policy options to deal with them;
2. disseminate the results of the research—particularly its policy recommendations—to a broad audience.

The institute provides a framework within which new curricula and teaching methods may be developed. In addition, a Scholars in Residence Program was instituted in 1984 to stimulate the exchange of ideas and dialogue between guest scholars and members of the institute and economics faculty.

The institute codirectors are Professors Attiat F. Ott and Roger Van Tassel.

COURSES

10 ISSUES AND PERSPECTIVES/ Lecture, Discussion

By analysis of important current policy issues, the student is introduced to the vital contribution economics can make to systematic thought and understanding. Rather than emphasizing economic theory, the course begins

with issues in the social sciences that are of obvious and important concern. From a study of issues, the course proceeds to show how development and use of some very basic economic concepts can aid materially in the analysis. Open to freshmen. Multiple sections.

Staff
Offered every semester

11 PRINCIPLES OF ECONOMICS/ Lecture, Discussion

Introduction to economic analysis. Develops a basic set of economic concepts utilized in the 200-level courses offered in the department. Basic elements of price and income theory are emphasized. Policy questions are treated both to reinforce concepts and to illustrate applicability of the analysis. Open to freshmen. Prerequisite: Economics 10.

Staff
Offered every semester

88 DIRECTED READINGS

Offered for variable credit.

Staff
Offered every year

89 SPECIAL PROJECTS

Offered for variable credit.

Staff
Offered every year

108 INTERNATIONAL FINANCIAL DEVELOPMENTS/ Lecture, Discussion

Introduction to the basic principles of international economics. The course examines the development of the international monetary system and current problems.

Mr. Baker
Offered every year

109 SOCIALIST THOUGHT/ Lecture

An exposition of socialist economic theory as a coherent body of knowledge uniquely suited to the analysis of major socioeconomic issues.

Mr. Shakow
Offered every other year

113 MONETARY ECONOMICS: THEORY AND POLICY/ Lecture, Discussion

The theory of money and its role in the modern economy are examined as are determinants of the supply of money and analysis of the role of monetary policy in stabilization policy. Commercial banks and nonbank financial intermediaries are studied.

Mr. Weinrobe
Offered every year

121 INTRODUCTION TO ACCOUNTING PRINCIPLES/ Lecture, Discussion

A first course in financial accounting designed to meet academic needs of: (a) students who will take only one course in accounting to obtain a good understanding of financial information such as that which appears in standard financial reports, (b) students who will be interested in work in managerial accounting as well as financial accounting, (c) students who will continue the study of accounting in intermediate and advanced courses. A student cannot receive credit for both Management 201 and Economics 121.

Mr. Nicholson
Offered every year

122 THE ECONOMICS OF FINANCE AND INVESTMENT/ Lecture, Discussion

An introduction to principles of finance and investment. The course begins with an analysis of the finance function in business and concludes with a study of investment principles viewed from the standpoint of both the firm and the investing public. Topics covered in connection with the finance function include factors affecting need for funds and sources of funds. Study of investment principles focuses on appraisal of capital investment opportunities and the nature and functioning of capital markets, such as the organized exchanges for stocks and bonds. Prerequisite: Economics 121 or permission of the instructor.

Mr. Nicholson

Offered every year

123.4 SPECIAL PROBLEMS: ENVIRONMENT AND ENERGY/ Seminar

An analysis of major problems that have arisen as a result of environmental concerns and the energy shortage. Emphasis is placed on problems stemming from external diseconomies, supply demand disequilibria, and technological change.

Mr. Shakow

Offered every other year

123.5 CONTEMPORARY POLITICAL ECONOMIC PROBLEMS: OPINION AND ANALYSIS/ Seminar

Examines the basis of intergroup differences in attitudes on questions of economic policy. Emphasizes interaction of values, facts, and analysis in opinion formation.

Mr. Van Tassel

Offered every other year

124 ECONOMIC THOUGHT AND MODERN CIVILIZATION/ Lecture

Broadly interdisciplinary. Emphasizes the relationship between economics and related areas, such as philosophy, ethics, political science, sociology, mathematics, and statistics. From the perspective of economic thought, the course traces developments in economic analysis, showing how economic analysis has affected and been affected by contact with other disciplines. The course considers how modern economic thought has come to diverge in essential aspects from the ideas of social philosophers like Adam Smith and Karl Marx and emphasizes what scientific economic analysis does and does not enable us to understand about modern social problems and issues.

Mr. Nicholson

Offered every year

126 PUBLIC POLICY TOWARD BUSINESS/ Lecture, Discussion

Examines the various types of industrial organization, the degrees of monopoly in competition, and the development of public policies that affect business. Among issues traced are the development of antimonopoly regulation, consumer protection, and public utilities. Business performance and government regulation are related to criteria from economic theory.

Mr. Veendorp

Offered every other year

128 ECONOMIC DEVELOPMENT/ Lecture, Discussion

See course description under Economics 228.

Staff

Offered every other year

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT/ Lecture

A review of political economic problems associated with such natural resources as agricultural land, energy goods, and minerals—as well as a resource common to all of us, our natural environment. Typical issues to be analyzed include the assessment of environmental impacts within a market-oriented economy, the potential role of international cartels in resource allocation, and the assessment of nuclear generation from an economic standpoint.

Mr. Shakow

Offered every other year

160 INTRODUCTION TO STATISTICAL ANALYSIS/ Lecture, Discussion

Examines basic concepts and techniques of statistical method in economic analysis: descriptive statistics, probability theory, sampling distribution, standardized normal distribution and other related distributions, simple and multiple regression, simple forecasting, and statistical decision-making.

Mr. Puffer

Offered every year

176 COMPARATIVE ECONOMIC SYSTEMS/ Lecture

Surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Selective aspects of mixed economies, market socialist economies, and centrally planned economies are examined. Topics include the indicative planning in France, permanent employment system in Japan, industrial democracy in Sweden, workers' self-management in Yugoslavia, economic reforms in Hungary, and resource allocation in the USSR.

Mr. Hsu

Offered every year

177 CHINESE AND JAPANESE ECONOMIES/ Lecture, Discussion

A comprehensive survey of the Chinese and Japanese economies—their development, institutions, and policies. Topics include historical background, agricultural development, industrial organization and development, fiscal and monetary policies, employment and labor, Sino-Japanese relations, and relations with the U.S.

Mr. Hsu

Offered every other year

196 ECONOMICS AND AMERICAN SPORT/ Seminar

Refer to course description under Geography 196, *Culture and American Sport*, and Psychology 196, *The Psychology of American Sport*.

Mr. Puffer

Offered every other year

205.1 MICROECONOMIC THEORY/ Lecture, Discussion

Describes and analyzes how a market-oriented economy functions in answering the five basic economic questions. These are: (a) What commodities to produce? (b) How much of each to produce? (c) What productive techniques to use and how to provide incentive? (d) How to distribute the output among the various members of society? (e) What provision to make for the future? Interspersed with the theory, the course contains frequent examples that demonstrate the use of microeconomics in solving problems faced by the decision-making unit in both the private and public sectors.

Staff

Offered every year

205.2 MACROECONOMIC THEORY/ Lecture, Discussion

Focuses on the forces that affect the overall performance of the economy. A study of the determinants of economic activity (such as consumption, investment, government purchases, and exports); measures of economic performance (such as the level and rate of growth of national income and product, the level of employment and unemployment, the general price level, and the nation's balance of international payments). Also deals with specific, current economic problems facing the U.S. and discusses public policies instituted to deal with them and the repercussions of some of these policies on world economies.

Staff

Offered every year

207 INTERNATIONAL ECONOMICS/ Lecture, Discussion

Applies and develops concepts of economic theory to such questions as: determinants of international and regional specialization and trade, the theory of tariff intervention, the balance of payments, adjustment forces and disequilibria, and application of theory to important issues of international trade.

Mr. Van Tassel

Offered every year

209 MARXIST ECONOMIC THEORY/ Lecture

An introduction to Marxist economic theory. A comparison is made between the development of Marxist and neoclassical economic analysis. Prerequisite: permission of instructor.

Mr. Shakow

Offered every other year

215 PUBLIC EXPENDITURES/ Seminar

Examines issues and priorities related to the size and composition of the federal budget and federal programs. Evaluation of federal budget expenditures and program levels according to criteria of cost-benefit analysis and cost effectiveness are carried out. Issues relating to private-public use of resources and how public policy affects these uses are also examined.

Ms. Ott

Offered every other year

216 TAX SYSTEMS AND POLICIES/ Seminar

Analyses the federal tax system and U.S. tax policies. Explains emerging issues in federal taxation including tax equity, the effect on income distribution, the relative tax burden of the rich and the poor and alternative tax systems as well as reform proposals to restructure the U.S. tax system. Tax incentives as a goal for economic growth are also discussed.

Ms. Ott

Offered every other year

222 LABOR/ Discussion

Applies the concepts of labor supply and labor demand in a basic model of labor markets. The model is used to analyze the results of the labor market: wages, employment, and unemployment. The analysis is modified to allow for market imperfections and nonmarket forces, including trade unions and the government. Further topics are discussed, including wage discrimination and income inequality.

Mr. Gray

Offered every year

228 ECONOMIC DEVELOPMENT/ Lecture, Discussion

Examines the major theories of economic development, the major problems confronting less developed countries, and the policies and strategies appropriate for economic development. Topics include agricultural development, income distribution, industrialization strategies, foreign aid and

investment, population, labor and employment. Offered in alternate years with 128.

Mr. Hsu

Offered every other year

235 ECONOMICS OF HOUSING/ Lecture

An examination of the nature of housing, including an investigation of supply and demand in the housing market, the relationship between housing and the aggregate economy, the role of housing finance, and the role of the government in the housing market. Prerequisite: Economics 113.

Mr. Weinrobe

Offered every other year

255 PERSONAL INCOME DISTRIBUTION: THEORIES AND POLICIES/ Seminar

Surveys theories of income distribution and sources of income inequality in the U.S. Also discussed are issues dealing with income redistribution policies in the U.S. and foreign countries.

Ms. Ott

Offered every other year

260 INTRODUCTION TO MATHEMATICAL STATISTICS/ Lecture

Introduction to the theory of statistics from the managerial point of view. Economics 271 should be taken concurrently, or as a prerequisite.

Mr. Shakow

Offered every year

265 BASIC ECONOMETRIC THEORY/ Lecture

An introduction to econometric methods, statistical inference and testing hypotheses, model-building technique and theoretical justification of the model, and the estimation method used. Various estimation methods are presented and evaluated in terms of their performance and validity in economic empirical studies.

Mr. Shakow

Offered every year

271 INTRODUCTION TO MATHEMATICAL ECONOMICS/ Lecture, Discussion

An introductory survey of the use of mathematical methods in economic analysis. Special attention is given to the mathematical framework of the theory of price determination. Prerequisite: permission of instructor. Offered for variable credit.

Mr. Veendorp

Offered every year

275 ECONOMICS OF THE EEC/ Seminar

Examines the present economic policies of the European Economic Community and possible future developments.

Mr. Baker

Offered Periodically

277 REGIONAL ECONOMICS/ Lecture

Examines theoretical and practical aspects of economic development, cyclical changes and trade between regions of the United States. Location theory, growth trends, wage and income differentials, structural unemployment, interregional input/output tables, and inequalities in income distribution are considered.

Mr. Puffer

Offered every other year

280 JUNIOR HONORS

Designed to assist honors candidates in integration of the field. Offered as a full course.

Staff

Offered every year

281 SENIOR HONORS

Offered for variable credit.

Staff

Offered every year

282 HONORS

Eligible students selected by the department may work off campus for a summer and a semester as junior professional economists in business, government, or industry and receive academic credit. Offered for variable credit.

Staff

Offered every year

299.9 INTERNSHIP

Students spend a semester working full- or part-time outside the University as part of their academic experience. To qualify, the internship experience must significantly involve an extension, embodiment, or illustration of previous or concurrent systematic academic work in economics. Offered for variable credit.

Staff

Offered every year

301.1 MICROECONOMICS/ Seminar

Mr. Veendorp

Offered every other year

301.2 MICROECONOMICS/ Seminar

Staff

Offered every other year

302.1 MACROECONOMICS/ Seminar

Ms. Ott

Offered every year

302.2 MACROECONOMICS/ Seminar

Ms. Ott

Offered every year

313 MONETARY ECONOMICS/ Seminar

Mr. Weinrobe

Offered every other year

325 PUBLIC FINANCE/ Seminar

Ms. Ott

Offered every other year

326 INDUSTRIAL ORGANIZATION/ Seminar

Mr. Veendorp

Offered every other year

327 INTERNATIONAL TRADE/ Seminar

Mr. Baker

Offered every other year

328 ECONOMIC DEVELOPMENT/ Seminar

Mr. Hsu, Mr. Puffer

Offered every other year

377 REGIONAL ECONOMICS/ Seminar

Mr. Puffer

Offered every other year

Education

DEPARTMENT FACULTY

Helen J. Kenney, Ed.D., *chair*: curriculum development, instructional theory, psychoeducation, evaluation

Douglas H. Fuchs, Ph.D.: special education, instructional psychology, assessment and evaluation

David S. Zern, Ph.D.: cognitive development, socialization, values and education

PART TIME FACULTY

Elaine M. Holland, M.A. in Ed.: psychoeducational diagnosis

Hessa S. Miller, M.A.: elementary education

Kenner H. Myers, M.S.: early childhood education

Joyce S. Rettstadt, M.A. in Ed.: creative arts

Nathaniel C. Seale, M.Ed.: child study

Jane V. Sigalis, M.Ed.: special education

Evans W. Tsoules, Ed.D.: psychoeducational assessment

AFFILIATE FACULTY

David R. Braley, M.A., M.Ed.: school-university liaison

Thomas P. Friend, M.Ed.: school-university liaison

David J. Kneeland, M.A.: school-university liaison

Elinor M. McKeon, M.Ed.: special education

Cynthia A. O'Connell, M.S.: psychoeducational methodology

Alexander J. Radzik, M.Ed.: school-university liaison

GRADUATE PROGRAM

Stuart R. Kahl, Ph.D.: educational research, statistics

William C. Kvaraceus, Ed.D.: measurement, social deviance

W. George Scarlett, Ph.D.: child development, early childhood education

David E. St. John, Ed.D.: educational management

Gaston Schaber, Ph.D.: comparative education

Cooperating Clark University academic faculty

UNDERGRADUATE PROGRAMS

Undergraduate education constitutes a major part of the work of the department. In conformity with its policy of emphasizing the importance of the liberal arts as a basis for educational practice, the department offers its courses and programs as electives and organized sequences related to an academic major. Clark students in education lay a broad foundation of scholarship in the liberal arts and take a concentration in an academic field to lead into specific teaching certification and preprofessional certificate programs.

The various undergraduate programs are designed for students interested in preparing for careers as educators in public and private schools and in nonschool, human-service oriented settings such as family life institutes, day-care centers for children and the elderly, youth organizations, courts, hospitals, correctional and rehabilitation institutions, and social service agencies. In conjunction with various academic departments, these programs serve both as preparation for professional study at the graduate level and for entry into beginning teaching and specialist positions. The following programs are provided through integrated course work and field experiences:

1) *Elementary Education*

The elementary-level (grades 1-6) teacher education program has been approved by the Interstate Certification Compact (ICC), a legally based certification reciprocity agreement between Massachusetts and each of thirty-one other states and the District of Columbia.

2) *Elementary Education and Special Education*

The special education sequence, taken as an extension of the elementary teaching program, is also approved by the Interstate Certification Compact and leads to dual certification in elementary education and special education.

3) *Early Childhood Education*

The early childhood education sequence at present leads to Massachusetts certification in grades K-3. The program will be reviewed for approval under the Interstate Certification Compact in the spring of 1985.

4) *Secondary Education*

The secondary mathematics and science programs at present lead to certification (grades 9-12) in Massachusetts. This program will be reviewed for approval under the Interstate Certification Compact in the spring of 1985. Certification programs in secondary subject fields and in art, theater, and music may be individually arranged.

5) *The Psychoeducational Clinician Sequence*

The psychoeducational clinician sequence consists of four courses, including a two semester practicum, providing intensive first level training in psychoeducational assessment and individualized educational planning. The program is designed especially for students in the junior and senior years who are considering advanced graduate work in school psychology and related professional fields.

6) *The Human Services Sequence*

The human services sequence consists of four courses, including a two semester practicum, designed for students interested in pursuing careers and/or graduate study in education and related professional fields such as social work, health and community education, rehabilitation, counseling, and guidance. Students' course work and field experiences deal with diverse groups including children, families, and the aged, in settings which may include schools, the court system, mental health agencies, and institutions. Students acquire conceptual as well as experiential skills through a balance of study and applied field work. Interaction with a variety of human service providers and systems in the Worcester area serves to integrate material from the sequence.

7) *The Elective Program*

Students may elect courses in education for general interest and background or to fill elective requirements in a departmental academic major. The department has crosslistings with English, geography, history, linguistics, psychology, and sociology.

The teaching certification sequences are limited to students who have completed major requirements at a satisfactory level of scholarship. The decision to elect one of the organized teaching programs must be made by sophomore year. Admission to and continuance in the program must be approved by the Department of Education, and—for secondary school and special subject teaching—must also be approved by the appropriate academic department for competency in subject matter areas.

Students interested in professional education are encouraged to consult with the undergraduate program coordinator of the department early in their careers at the University to discuss overall program planning.

GRADUATE PROGRAMS

The department offers one program leading to the degree of master of arts in education, and another leading to the degree of doctor of education. Both graduate programs of study are primarily oriented toward learners who are different because of their individual abilities or because of their sociocultural or economic backgrounds.

MASTER OF ARTS IN EDUCATION

This degree program is designed to extend the professional training of experienced educational practitioners. The program may be used to enrich the general theoretical background relevant to a candidate's area of educational practice and to develop new professional skills in individually-tailored program concentrations. Master's candidates concentrate their work in areas where there is depth in course offerings available through the facilities of the Department of Education and cooperating academic departments in the University. Clusters have been developed in special education, early childhood education, academic subject fields, environmental education, creative arts and education, and educational management.

Admission Requirements

In addition to the general Graduate School admission requirements, a personal interview is usually required by the Department of Education in order to determine the fit between the program resources and a candidate's goals and interests.

Degree Requirements

The course of study consists of a minimum of eight full course units with an additional requirement to be completed by one of three options: (a) an acceptable thesis, (b) the master's seminar in which an independent major paper is prepared and presented to fellow graduate students and members of the staff, or (c) two additional full courses. The passing of a final oral examination is required of all candidates.

DOCTOR OF EDUCATION

The doctor of education degree program is an organized, part-time course of study, extending over a three- to four-year period, which enables mid-career practitioners to obtain advanced professional training without unduly disrupting their work in the field. The program is planned for the experienced educator of proven ability who expects to assume high-level responsibility in administrative, planning, training, and evaluation roles in schools, government agencies, private organizations, or institutions of higher learning.

All doctoral students complete a core curriculum aimed at imparting a basic understanding of the analytic techniques, the social and behavioral determinants, and the management principles that will contribute to the development of new solutions to significant problems in education. The student then selects one of two program options: the learning specialist or the administrator-planner. The two are closely related. The learning specialist, as a social and psychological analyst, is concerned with the content and methodology of educational programs for a particular learner or group of learners; the administrator-planner has the task of program development, implementation, and evaluation.

Two year-long research seminars are scheduled during the first two years of study. During the first year, guided by a senior educational specialist, the student focuses on a specific topic of educational theory or

practice as a basis for an analytic paper that typically leads to the development of a dissertation proposal. During the second year research seminar, the student formulates a research plan that includes specification of the theoretical framework, methodology, instrumentation, and statistical design for the proposed study. In the third year, the student conducts the research and by the fourth year completes the required dissertation report.

A small and select group of graduate students ensures the advantages of program flexibility with much opportunity for close and continued contact between faculty and students. All program designs have a significant degree of individuality, reflecting the past training, experience, and professional goals of the students. The individual study plan is developed within a framework of departmental, University, and field resources.

DUAL M.B.A./Ed.D. DEGREE PROGRAM

A dual degree M.B.A./Ed.D. program has been established between the Department of Education and the Graduate School of Management for graduate students who wish to focus on a career in the management of educational institutions.

Admission Requirements

Admission to the doctoral program requires the completion of an acceptable baccalaureate and master's degree, either at Clark or elsewhere. Students who obtain their master's degrees with the department at Clark, and who wish to continue their doctoral studies in the department, must apply for continued study at the doctoral level.

A candidate must give satisfactory evidence of aptitude and capacity for graduate study as reflected in academic performance and aptitude tests (either the Miller Analogies or the Graduate Record Examination). Professional experience, which demonstrates a high level of competence and leadership ability, also is required.

Degree Requirements

Minimal requirements for candidates at the doctoral level demand the equivalent of two years of graduate course work beyond the master's level. A doctoral candidate must pass comprehensive examinations at the end of course work and complete a doctoral dissertation.

192 LANGUAGE IN SOCIAL CONTEXT

Refer to course description under Linguistics 192.

Ms. Nigrosh

201.1 THE CHILD AND THE EDUCATIVE PROCESS/ Lecture, Discussion

Deals with the behavioral and social science foundations of selected aspects of the educative process as they pertain to the elementary school-age child. Theoretical concepts and principles of learning and development are considered in relation to: the setting of educational objectives, instructional strategies, motivation, transfer, and assessment and evaluation procedures. Required in the elementary and special education sequences leading to certification.

Mr. Fuchs

Offered every year

201.2 THE EXPERIENCE OF ADOLESCENCE/ Lecture, Discussion

Explores adolescent development through theory and research drawn from the behavioral and social sciences. Students study, discuss, and report on

topics of central importance to education during the adolescent years. Special social and interpersonal problems and issues confronting today's adolescent are considered. Required in secondary level and special subject sequence leading to certification.

Mr. Zern

Offered every year

206 AUTOBIOGRAPHY WORKSHOP

Refer to course description under Geography 206.

Mr. Knos

209 SIMULATION AS A LEARNING DEVICE

Refer to course description under Geography 209.

Mr. Knos

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING/ Lecture, Discussion

A dual focus is on: (1) illustration and analysis of various cognitive and social interpersonal models of teacher and student behavior in the classroom setting, and (2) introduction to and development of skills involved in systematic observational methodologies, with the classroom as the natural setting. Students carry out a series of assigned observational tasks and execute their own individual projects. May be taken for credit as Psychology 211.

Mr. Zern

Offered every year

223 CONTEMPORARY POLITICAL ECONOMIC PROBLEMS: OPINION AND ANALYSIS

Refer to course description under Economics 123.5.

Mr. Van Tassel

230 THE INSTRUCTIONAL PROCESS/ Lecture, Seminar

Examines the goals and underlying values of the school experience with particular reference to the theoretical and empirical literature relevant to the role of the teacher, instructional theory, and evaluation of learning. Various teaching models, traditional and contemporary, are analyzed and critiqued. Classroom observations and a field-based project are required.

Ms. Kenney

Offered every year

234.1-234.2 FIELD EXPERIENCE: SPECIAL EDUCATION AND HUMAN SERVICES/ Seminar, Field placement

These courses provide direct, supervised experience within a wide range of educational and human service agencies. Placements are based upon assessment of students' experience, goals, and academic backgrounds. Placement possibilities include schools, mental health centers, institutions, the courts, substance-abuse centers, crisis agencies, and social planning agencies. A University coordinator maintains ongoing contact with the student and placement site to ensure continuity from academic to field work. A concurrent weekly seminar provides the opportunity for students to analyze their field work experience. Special note: These courses may be taken as a full year, two course sequence (Education 234.1 and 234.2) or as a single course either semester (Education 234.1).

Mr. Seale

Offered every semester

235 FIELD EXPERIENCE IN THE ELEMENTARY SCHOOL/ Seminar, Field placement

Provides an initial experience in the elementary classroom and an introduction to the elements of teaching—curriculum planning, instructional strategies, classroom management, etc. Students spend five hours per week in an assigned classroom assisting the teacher and working with small groups of children. In teams, students develop and teach a unit of instruction. A weekly seminar addresses classroom experience and considers legal and program issues relating to mainstreaming special needs students in the regular school setting.

Ms. Miller

Offered every year

236 PSYCHOEDUCATION CENTER INTERNSHIP/ Seminar, Practicum

Provides systematic training in observation, testing, and tutoring of children and adolescents with learning problems. Includes experience both at the Psychoeducation Center and the referring schools, and participation in weekly seminars.

Ms. Kenney, Mr. Fuchs,
Ms. O'Connell

Offered every semester

237.1 INTRODUCTION TO STUDENT SERVICES IN HIGHER EDUCATION/ Lecture, Seminar

Designed to introduce undergraduates to theories of administration student development, and organizational structure as applied to student personnel administration in higher education. Students consider different professional issues in managing student personnel services, leadership training, program development and evaluation.

Staff

Offered every year

237.2 PRACTICUM IN STUDENT SERVICES IN HIGHER EDUCATION/ Field placement

A practicum in a particular area of student services or student personnel administration may be arranged in conjunction with Education 237.1 or independently with permission.

Staff

Offered every year

241 SEMINAR: CLARK IN HISTORICAL PERSPECTIVE

Refer to course description under History 246.

Mr. Koelsch

245 SIGNIFICANCE OF CULTURAL DIFFERENCES IN EDUCATION/ Seminar

Deals with current theory and practice related to multicultural issues, on the assumption that human communication and interactions are functions of one's cultural life. Provides a forum for discussion of such topics as cultural self-awareness, overt/covert bias, historical treatment of minorities, bilingual education, cross-cultural conflict, to help students interact more favorably with members of other cultures, and to help them facilitate children's intercultural acceptance.

Ms. Miller, Ms. Sigalis

Offered every other year

247.1 CURRICULUM AND INSTRUCTION IN READING AT THE ELEMENTARY SCHOOL LEVEL/ Lecture, Discussion, Field placement

Presents the key elements of skill development, lesson planning, and in-

struction in reading at the elementary level (grades 1-6). In a two-hour weekly field experience students apply learnings from classroom lecture-discussions. Topics include stages of reading development, selection and organization of content, examination of self-designed and commercial materials, teaching/learning activities, and evaluation of learning outcomes. Training is provided in informal assessment, diagnostic procedures, and use of standardized instruments for evaluation.

Ms. Miller

Offered every year

247.2 CURRICULUM AND INSTRUCTION IN READING AND LANGUAGE AT THE EARLY CHILDHOOD LEVEL/ Lecture, Discussion, Field placement

Deals with reading readiness and language development of young children. Key elements of skill development, lesson planning, and instruction in reading at the early childhood level (K-3) are stressed. In a two-hour weekly field experience students apply learnings from classroom lecture-discussions. Topics include stages of reading development, selection and organization of content, examination of self-designed and commercial materials, teaching/learning activities, and evaluation of learning outcomes. Training is provided in informal assessment, diagnostic procedures, and use of standardized instruments for evaluation.

Ms. Myers

Offered every year

248.1 CURRICULUM AND INSTRUCTION IN MATHEMATICS AND SCIENCE AT THE ELEMENTARY SCHOOL LEVEL/ Lecture, Discussion, Field placement

Deals with key elements of curriculum planning and implementation in mathematics and science for the elementary school: stating of objectives; assessment of initial learner status; selection and organization of content, materials, learning activities; instructional modes; evaluation of learning outcomes. A weekly two-hour, school-based field experience is required.

Ms. Sigalis

Offered every year

248.2 CURRICULUM AND INSTRUCTION IN MATHEMATICS AND SCIENCE AT THE EARLY CHILDHOOD LEVEL/ Lecture, Discussion, Field placement

Deals with key elements of curriculum planning and implementation in mathematics and science for the early childhood years. The need for developmentally appropriate content, materials, and learning activities is stressed as well as assessment of initial learner status and evaluation of learning outcomes. A weekly two-hour, school-based field experience is required.

Ms. Myers

Offered every year

251 EDUCATION AND SOCIAL POLICY/ Lecture, Discussion

Examines the relationship between social problems, social policy, and education. Conceptual tools for the analysis of social policies are utilized. Examination of existing programs and social agencies enables students to understand agency functions, client population, and the relationship between the individual agency and the larger social service network. Emphasis is placed on: social problems and social solutions, linking individuals and external primary groups with societal resource systems, and the impact of social policy change on individuals and institutions.

Mr. Seale

Offered every year

252 THE EARLY CHILDHOOD EDUCATOR: THEORY AND PRACTICE/ Seminar, Field placement

Each student spends eight to ten hours a week in a field placement and attends a weekly two-hour seminar. Day care centers, nursery schools, and kindergartens are considered as field sites. Seminar sessions address the nature of the developing child from infancy to age eight, the development of language and thought, the value of play, the early childhood curriculum, the role of the teacher, and the implications of family stress and pressure on the learning child.

Ms. Myers

Offered every year

254 AN INTERDISCIPLINARY PERSPECTIVE ON THE FIELDS OF MATHEMATICS AND SCIENCE/ Lecture, Discussion

Considers the history and development of mathematics and science as fields of knowledge and their relationship to other fields as a basis for understanding the aims for secondary school mathematics and science education. Implications for curriculum design and instructional methods are analyzed. Includes presentations by scientists and mathematicians.

Staff

Offered every year

259 SOCIAL PSYCHOLOGY OF IDENTITY

Refer to course description under Sociology 260.

Ms. Jacobs

265 TEACHING ENGLISH AS A SECOND LANGUAGE

Refer to course description under Linguistics 295 or English 295.

Mr. Macris

266 PSYCHOEDUCATIONAL ASSESSMENT METHODS I: BASIC LEARNING PROCESSES/ Lecture, Discussion, Practicum

Intensive experience in administering and interpreting individual tests of intellectual and perceptual-motor functioning, with particular emphasis on the Stanford-Binet and Weschler Intelligence Scales. A central focus is on underlying theoretical constructs and the interpretation, integration, and application of educational and clinical data for individualized educational planning.

Mr. Tsoules

Offered every year

267 PSYCHOEDUCATIONAL ASSESSMENT METHODS II: ACHIEVEMENT AND RELATED PERSONAL AND SOCIAL FACTORS/ Lecture, Discussion, Practicum

Focuses on the administration of group and individual tests to determine achievement status and related personal and sociocultural factors such as aptitude, interests, personality, social and interpersonal competencies, cognitive style, environmental setting.

Mr. Tsoules

Offered every year

268 PSYCHOEDUCATIONAL PRACTICUM AND SEMINAR/ Seminar, Field placement

This field-based course provides a two-semester placement, eight to ten hours a week, within the pupil personnel department of a public school system. Each student is placed with a school psychologist and/or a counselor who functions as an ongoing supervisor. Practicum activities include supervised experience in conducting and interpreting psychoeducational assessments, obtaining social and developmental history information

through home visits, and observing and participating in the development of individualized educational plans as part of the team evaluation process. A concurrent, weekly seminar focuses on the development, presentation, and discussion of comprehensive case studies.

Mr. Seale

Offered every year

269 THE SKILLED HELPER

An introductory experience designed for the development of the helping professional. Emphasis is placed on: dynamics of the helping relationships, basic interviewing skills, and approaches to counseling. Students who are not concurrently taking a field course are placed in a human service agency one half day per week.

Mr. Seale

Offered every year

271 FIELD EXPERIENCE: SECONDARY SCHOOL/ Seminar, Field placement

A field-based introduction to methods of teaching in the secondary school. Students work in a classroom and with teacher trainers to learn about planning instruction and managing classrooms. Differences and needs of individual students are emphasized. The course consists of 1) a field component of five hours per week, and 2) a weekly University seminar.

Staff

Offered every year

272.(1-9) CURRICULUM AND METHODS OF TEACHING AT THE SECONDARY LEVEL/ Seminar

Taken concurrently with student teaching for the first four weeks of the semester. Mornings are spent in a high school classroom and afternoons in a University seminar aimed at developing the student's ability to design instruction in a specific subject and at acquainting the student with the typical secondary curriculum. By the end of the course the student will have designed a unit and will have begun to teach it to one class. Offered every spring for one course credit.

272.1 Curriculum and Methods of Teaching Secondary English

272.2 Curriculum and Methods of Teaching Secondary Foreign Languages

272.3 Curriculum and Methods of Teaching Secondary Social Studies

272.4 Curriculum and Methods of Teaching Secondary Science

272.5 Curriculum and Methods of Teaching Secondary Art

272.6 Curriculum and Methods of Teaching Secondary Theater

272.7 Curriculum and Methods of Teaching Secondary Media Studies

272.8 Curriculum and Methods of Teaching Secondary Music

272.9 Curriculum and Methods of Teaching Secondary Mathematics

Academic and Education

Offered every year

Departments

272 PRACTICUM IN THE SECONDARY SCHOOL/ Field placement

Intensive ten-week period of observation and teaching in a secondary (grades 9-12) classroom in the subject in which the student plans to teach. Individual supervision is given by a University supervisor and by a teacher in a cooperating school. Prerequisite: permission of both the academic and education departments. Taken concurrently with 272 (1-9). Offered every spring for two course credits.

Academic Departments,

Offered every year

Staff, Cooperating Teachers

281 THE SOCIAL CONTEXT OF EDUCATION/ Lecture, Discussion

Reviews and analyzes social and cultural theories that provide an understanding of the process of education. Levels of interaction under consideration are the classroom, the school, and the community. Patterns of educating are considered within a cross-cultural context, and tools are provided to facilitate such analyses.

Mr. Zern

Offered every other year

284 YOUNG CHILDREN AND THE ARTS/ Workshop

Includes instruction in art, music, and drama for young children. A major aim is to raise the college student's own artistic consciousness and competency along with practical classroom and group application.

Ms. Rettstadt

Offered every year

288 INTERNSHIP MODULE IN ELEMENTARY EDUCATION

This integrated internship provides an intensive experience in elementary schools (1-6) in the Worcester area. It involves a full-time, supervised practicum, including theoretical course work, seminars, and conferences. The elementary module provides credit in the following areas:

288.1 Practicum (two full courses)/ Field placement

288.2 Critical Issues in Early Childhood and Elementary Education (one-half course)/ Seminar

288.3 Individualized Instruction and the Integrated Curriculum (one full course)/ Lecture, Discussion

288.4 Creative Arts and Education (one half course)/ Workshop

Special workshops in health and physical education for elementary school children are required. Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the internship module.

Ms. Miller and Staff

Offered every semester

289 INTERNSHIP MODULE IN EARLY CHILDHOOD EDUCATION

Provides an intensive experience in the early school grades (K-3) in the Worcester area. It involves a full-time, supervised practicum, including theoretical course work, seminars, and conferences. The early childhood module provides credit in the following areas:

289.1 Practicum (two full courses)

289.2 Critical Issues in Early Childhood and Elementary Education (one half course)/ Seminar

289.3 Individualized Instruction and the Integrated Curriculum (one full course)/ Lecture, Discussion

289.4 Creative Arts and Education (one half course)/ Workshop

Special workshops in health and physical education for young children will be required. Limited to seniors who have completed major requirements and who meet departmental requirements for admission to the internship module.

Ms. Myers, Staff

Offered every semester

291 PSYCHOLOGY AND EDUCATION OF HANDICAPPED CHILDREN AND YOUTH/ Lecture, Discussion

An introduction to the field of special education. Mental retardation, learning disabilities, emotional disturbance, hearing and visual impairment, physical handicaps, giftedness, and other categories of exceptionality are explored conceptually and practically. Current issues such as mainstreaming, labeling, and testing also are reviewed.

Mr. Fuchs

Offered every year

**292 SEMINAR AND FIELD EXPERIENCE IN SPECIAL EDUCATION/
Seminar, Field Placement**

The student works under the close direction of a cooperating teacher, for ten to twelve hours a week in a special educational setting (resource room, special class, special agency, etc.). A concurrent weekly University seminar considers language development, communication disorders, and rehabilitation issues.

Staff Offered every year

294 INTERNSHIP MODULE IN SPECIAL EDUCATION

Includes a supervised practicum in a moderate special needs setting at the elementary school level (Grades N-9) with related course work centering on psychoeducational assessment techniques, and individualized educational planning and implementation. Emphasis is placed on the integration and utilization of a full range of data in the design and implementation of individualized educational plans. Module credit is allocated as follows:

- 294.1 Individualized Educational Planning** (one full course)/ Lecture, Discussion
294.2 Practicum in Special Education (two full courses)/ Seminar, Field placement
Staff Offered every year

295 GROUP AND FAMILY PROCESSES

Refer to course description under Sociology 295.
Staff

299.1 DIRECTED READINGS - UNDERGRADUATE

Offered for variable credit.
Staff Offered every semester

299.2 DIRECTED RESEARCH - UNDERGRADUATE

Offered for variable credit.
Staff Offered every semester

299.4 FIELD PROJECTS - UNDERGRADUATE

Provides individualized and extended experiences in a wide variety of educational and human service agencies and institutions. Supervision is provided by the University and field agency personnel; combines related seminars and conferences, and readings as a basis for critical analysis of the experiences within the context of applied theory and practice. Offered for variable credit.
Staff Offered every semester

299.5 SPECIAL PROJECTS - UNDERGRADUATE

Offered for variable credit.
Staff Offered every semester

299.9 INTERNSHIPS - UNDERGRADUATE

Offered for variable credit.
Staff Offered every semester

305 COGNITIVE FACTORS IN THE EDUCATIVE PROCESS/ Lecture, Discussion

A selective review of major theories of cognitive functioning focusing on dynamics within the individual. Among others, Piaget, Skinner, R. White, Freud's secondary processes, and Wertheimer are studied.

Mr. Zern

Offered every year

306 SEMINAR: APPLICATIONS OF GAME THEORY

Refer to course description under Government 202.

Mr. Blydenburgh

343 ANALYSIS OF THE RESEARCH PROCESS

Focuses on understanding the structure and intent of a research report. The form of the course consists of the careful analysis of existing educational research. Each source is considered in terms of particular elements in its overall structure, including hypothesis formation, operationalization of major terms, research design, etc.

Mr. Zern

Offered every year

345 RESEARCH AND EVALUATION IN EDUCATION PROGRAMS

Explores the multiple roles of research and evaluation in developing and improving educational programs, emphasizing the effective use and design of needs assessment, policy research, program implementation research, and impact evaluation. Members develop a research design for their own professional setting.

Ms. Kenney

Offered every other year

366 SEMINAR IN COLLEGE CURRICULUM DESIGN

Refer to course description under Geography 366.

Mr. Knos

371 THESIS RESEARCH

Individual advisement on doctoral dissertation. Students meet with members of their Dissertation Committee for assistance with their dissertation study. Advising conferences are scheduled as needed by the individual student with committee members. The chair of the Dissertation Committee coordinates the advising process.

Staff

Offered every semester

380 DEPARTMENTAL MASTER'S SEMINAR/ Presentations, Discussion

Designed for master's degree candidates who are not writing a thesis. Requires a major analytic paper on a significant educational problem or issue which may include an empirical or practical component. Students meet individually and in small groups to develop a topic focus and to discuss relevant research and professional literature.

Ms. Kenney, Staff

Offered every year

382 FOUNDATIONS OF SPECIAL EDUCATION/ Seminar

In this graduate level course, a sociological perspective on special education guides discussion of core topics such as deviance, labeling, mainstreaming, punishment, and testing. The works of Binet, Galton, and Itard, as well as those of contemporary educators and psychologists, are reviewed.

Mr. Fuchs

Offered every year

383 HUMANITIES SEMINAR: LEARNING AND KNOWING/ Lecture, Discussion

An interdisciplinary study of the variety of ways we learn and know. The focus is a consideration of the various and often conflicting views of the ideal of the educated person.

Mr. Overvold

Offered every year

384 RESEARCH SEMINAR I

This two-semester course is designed to enable the student to explore the theoretical basis and empirical research in a selected educational problem area. It is intended to lead to the formulation of a dissertation topic. Students meet individually and in small groups with a mentor from within the University or from a relevant professional field. The results of the year's experience is reported in a formal analytic paper. A full year course.

Ms. Kenney, Staff

Offered every semester

385 RESEARCH SEMINAR II

This two-semester course serves as a means for students to develop and discuss their ongoing dissertation research with faculty and other students. It is intended to lead to the formulation of a dissertation research proposal.

Staff

Offered every semester

386 ASSESSMENT AND OBSERVATION IN MAINSTREAM AND SPECIAL EDUCATION SETTINGS/ Seminar

Medical, behavioral, and ecological approaches to gathering data in educational settings discussed conceptually and practically. Within one or more of these alternate perspectives, basic principles of measurement (e.g., reliability, validity, test norms, item analysis) are reviewed.

Mr. Fuchs

Offered every year

391 QUANTITATIVE MEASUREMENT AND ANALYSIS I/ Lecture, Seminar

Introduction to measurement theory and basic statistics. Topics covered include measurement scales, instrument development, reliability, and validity; descriptive statistics; correlational analysis. Practical experience in development of an instrument, collection of data, validity and reliability analysis using SPSS computer programs. Formerly titled 389 *Research and Professional Issues Seminar*.

Mr. Kahl

Offered every year

392 QUANTITATIVE MEASUREMENT AND ANALYSIS II/ Lecture, Seminar

Statistical hypothesis testing, including chi-square tests, t-tests, tests of correlations, multiple regression, ANOVA, and ANCOVA. Practical experience in formulating and testing hypotheses using a real data set and SPSS computer analyses and in interpreting and reporting statistical results. Formerly titled 389 *Research and Professional Issues Seminar*.

Mr. Kahl

Offered every year

399.1 DIRECTED READINGS - GRADUATE

Offered for variable credit.

Staff

Offered every semester

399.2 DIRECTED RESEARCH - GRADUATE

Offered for variable credit.

Staff

Offered every semester

399.4 FIELD PROJECTS - GRADUATE

Offered for variable credit.

Staff

Offered every semester

399.5 SPECIAL PROJECTS - GRADUATE

Offered for variable credit.

Staff

Offered every semester

399.9 INTERNSHIPS - GRADUATE

Offered for variable credit.

Staff

Offered every semester

English

DEPARTMENT FACULTY

Virginia M. Vaughan, Ph.D., *chair*: Shakespeare, Renaissance drama, Chaucer, and medieval literature

James F. Beard Jr., Ph.D., *director of graduate studies*: American literature, American studies, American fiction, twentieth-century American fiction and drama

Charles S. Blinderman, Ph.D.: science and literature, Victorian literature, communications

John J. Conron, Ph.D.: American literature, American studies, American landscape

James P. Elliott, Ph.D.: American literature, literature and film, contemporary narratives; editing

Serena S. Hilsinger, Ph.D.: modernist literature, women writers

James Macris, Ph.D.: linguistic theory, systems analysis, primate communication, animal behavior

Leone Scanlon, Ph.D., *director of writing center*: composition

Stanley Sultan, Ph.D.: modernist literature, literary theory, Anglo-Irish literature

Roberta E. Tovey, Ph.D.: Restoration and eighteenth century, novel

EMERITI

Karl O.E. Anderson, Ph.D.

William H. Carter Jr., Ph.D.

Jessie C. Cunningham, Ph.D.

UNDERGRADUATE PROGRAM

The English Department's program is designed to meet the needs and interests of nonmajors as well as majors. It aims to assist all students in developing skills in close reading, critical thinking, and effective writing, as well as in acquiring knowledge and experience valuable in any vocation. Instructors offer a spectrum of approaches to literary study ranging from linguistic and textual analysis to interpretations that complement other disciplines, such as philosophy, psychology, science, management, comparative literature, and history.

The program encourages the development of a sense of cultural history, a sensitivity to literary values, and a firsthand knowledge of important authors, works, and periods of literature in English. The prospective English major chooses at first among elective courses, gradually focusing on the study of some particular period, theme, or activity appropriate to his or her interests or goals. *Introduction to Literature and Composition* (English 20), an elective, is particularly recommended for freshmen because it combines training in close reading with critical thinking and writing. *Expository Writing* (English 18), also an elective, is especially valuable for students wishing to improve their composition. During the freshman year, the prospective English major may wish to take or to begin a two-semester historical sequence. These include *Major American Writers* (English 101), *English Poetry* (English 153), *English Fiction* (English 154), and *English Drama* (English 155).

In the sophomore year, majors normally continue their work in a historical overview. Also during this year, the major selects—in consultation with an adviser and other appropriate members of the staff—a suitable area of concentration. The “concentration” part of the English major is an integrated structure permitting each student to choose from a wide variety of recommended courses, inside and outside the English Department, that are related to the particular periods, themes, or activities appropriate to his or her special interests or goals. A major concentrating in literary criticism and aesthetics, for example, might achieve this integration by taking relevant courses in comparative literature, linguistics, philosophy, intellectual history, psychology, and practical criticism in arts other than literature. Other suggested areas of concentration are: literature of the Renaissance, American literature, American studies, literature and the teaching of English, linguistics, literature and business, literature and science, literature and the performing arts, twentieth-century literature, women’s studies, and writing (including journalism). Students wishing a double major may make the second major the basis for their concentration, or they may—with the approval of their advisers and the department—evolve their own concentrations in student-designed majors. Since the value of the concentration will depend, to a considerable extent, on the confluence of studies from a variety of disciplines, the importance of regular consultation with advisers in the selection of courses cannot be overstressed.

The basic program for all English majors may be summarized as follows. It should be noted that some courses fulfill more than one requirement and that some courses, by arrangement through the Worcester Consortium colleges, may be taken at Assumption College and the College of the Holy Cross.

SUMMARY PROGRAM FOR ENGLISH MAJORS

Nonrequired Preparatory Courses:

- 20, *Introduction to Literature and Composition*
- 18, *Expository Writing*
- 19, *Intermediate Composition*

General Requirements:

- A. One course on poetry: 153a, *English Poetry*; or 105, *American Poetry*
- B. Two of the following four historical sequences:
 - 1. 101a and 101b, *Major American Writers*
 - 2. 153b, *English Poetry*
 - 3. 154a and 154b, *English Fiction*; or 115a, *Fiction by Women Writers* and 115b, *Modern Fiction by Women Writers*
 - 4. 155a and 155b, *English Drama*

C. One 200-level seminar in criticism from the following: 239, *American Literary Renaissance*; 297, *Varieties of Literary Criticism*; 298, *Mythopoetic Mode*; Linguistics 286, *Linguistic Approaches to Literature*; Classics 240, *Studies in Narrative Form*; Classics 251, *Seminar in Literary Criticism*; 300, *Introduction to Graduate Study in English*

D. Area Requirements:

To help majors develop greater historical perspective and awareness of the range and variety of English and American literature, all majors must take at least:

1. Two full courses or seminars dealing with English literature written before 1700. (One of these courses may be 100-level, i.e.: 112, *Introduction to Shakespeare*; 153b, *English Poetry*; or 155a, *English Drama*.) The 200-level courses fulfilling this requirement include 203, *Medieval Literature*; 206, *Chaucer*; 212a and b, *Advanced Shakespeare*; 220, *Studies in the Renaissance*; 222, *Milton and the Restoration Drama*.

2. Two full courses or seminars dealing with English or American literature written between 1700 and 1900. (One of these courses may be 100-level, i.e.: 115a, *Fiction by Women Writers*; 101a or 101b, *Major American Writers*; 154a or 154b, *English Fiction*; or 155b, *English Drama*.) The 200-level courses fulfilling this requirement include: 228, *Jane Austen*; 236, *British Romantic Literature*; 239, *American Literary Renaissance*; 240, *American Culture and Society, 1820-1860*; 242a and 242b, *Radical Voices in Nineteenth-century Literature [Victorian]*; 244, *Romantic and Victorian Gothic*; 245, *Darwinism*; 247, *Dickens*; 249, *American Realism*; 254, *Naturalism in American Fiction*; 279, *The American Landscape*.

E. Every major's program must include at least *four* full-semester courses at the 200-level in English in addition to the required seminar designed to suggest or demonstrate different means of achieving critical synthesis.

HONORS PROGRAM

A student who wishes to take honors in English should choose a topic and an adviser and apply to the department chair before the end of junior year. At the student's discretion and with the adviser's approval, a student may register for an *Honors in English* project, which will carry one or two credits. If the project warrants two courses, credit for one semester's *Directed Reading* and one semester's *Directed Writing* can be arranged simultaneously or in sequence. The adviser and the student will agree on deadlines for the project's stages, but the department requires a first draft by the first Monday in April. A complete thesis is due one week before the last day of classes. A second reader, chosen by the student and the adviser, will participate in the final evaluation. In no case will honors be granted to any student who fails to meet *both* deadlines (although the project still qualifies for course credit and grade).

DIRECTED RESEARCH OPPORTUNITIES

During their junior and senior years, English majors are encouraged to experience professional literary scholarship by engaging in research with a professor of the student's choice. The research may take several forms: It may be funded by a grant; it may be undertaken for course credit; or it may be in the form of a special project. Past research projects have included work on the scholarly editions of James Fenimore Cooper's texts, investigation of the theater history of *The Tempest* and *Othello*, review of commentaries on classic twentieth-century drama, and studies in Darwinism. Students should identify an area of interest and contact their advisers to see if such work is desirable for their concentrations.

INTERNSHIP OPPORTUNITIES

In cooperation with the University's Internship Office, the English Department administers a program of internships for juniors and seniors. Internships are available both in University offices and in the city—in newspapers, news departments of radio and television stations, periodical and book publishers, and communications departments. Internships can in most cases be integrated into the student's chosen concentration.

GRADUATE PROGRAM

The University offers a program leading to the master of arts degree in English. A limited number of scholarships providing tuition remission are available for superior students. The department also offers several teaching assistantships, involving half-time teaching and half-time study, with stipends ranging up to \$5,000, plus the remission of tuition.

For the master of arts, the student must satisfactorily complete at least eight full upper-level courses or seminars, including 300, *Introduction to Graduate Study*; and 349, *Thesis Workshop*. In addition to completion of the master's thesis (English 350), the student must pass a final oral examination.

Some teaching experience at Clark, or such other teaching as the department may regard as equivalent, is prerequisite to the master's degree.

COURSES

16 CREATIVE WRITING: FICTION/ Workshop

A course designed to cultivate and guide student work, particularly in the short story, the lyric poem, and the informal essay. Class meetings deal largely with important aspects of the art of fiction; published literary works and student manuscripts are discussed. Not open to freshmen. Prerequisite: one semester of literature taught in any department. Graded only on a credit/no record basis.

Staff

Not offered on a regular basis

17 CREATIVE WRITING: POETRY/ Workshop

Open to students who have taken English 16 and to students mainly interested in writing verse. Prerequisite: same as English 16. Not open to freshmen. Like most of our other writing courses, English 17 is graded only on a credit/no record basis.

Staff

Not offered on a regular basis

18 EXPOSITORY WRITING/ Workshop

For this course we will define writing as thinking through language—a way of discovering and exploring thought and a way of communicating it to an audience. Centered on student writing, the course seeks to enable students to enact this process of exploring and learning as well as to prepare written products, including a short investigative paper, appropriate to a range of rhetorical situations.

Staff

Offered every semester

19 INTERMEDIATE COMPOSITION/ Workshop

Designed to help those who have acquired competence in nonfiction prose to improve their style and rhetorical effectiveness through extensive practice. Among the methods used may be keeping a journal, reading one's writing aloud, and studying the work of published essayists. Each student's own writing will be read both by the instructor and by other stu-

dents. Workshop classes will require active participation. Permission of the instructor required.

Ms. Scanlon

Offered every year

20 INTRODUCTION TO LITERATURE AND COMPOSITION/

Discussion

Provides the student with an opportunity for intensive reading and writing about basic elements of poetry, fiction, and drama. Small sections and limited reading lists help establish an atmosphere conducive to significant class discussion; emphasis is placed on writing effectively about literature. Strongly recommended for prospective English majors. No student may take more than one section of English 20.

Staff

Offered every year

21 ENGLISH AS A SECOND LANGUAGE I/ Lecture, Discussion

Designed primarily to improve speaking and writing skills of less advanced foreign students through individual instruction. Some attention is paid to reading and to aural comprehension. Methods and exercises are suited to the needs of each student as determined in an individual evaluation by the instructor at the beginning of the semester.

Staff

Offered every semester

22 ENGLISH AS A SECOND LANGUAGE II/ Lecture, Discussion

Designed primarily to improve speaking and writing skills of more advanced foreign students through individual instruction. Some attention is paid to reading and to aural comprehension. Methods and exercises are suited to the needs of each student as determined in an individual evaluation by the instructor at the beginning of the semester.

Staff

Offered every semester

101 MAJOR AMERICAN WRITERS/ Lecture, Discussion

Through study of representative masterworks, the course traces the main currents of American literature from Puritan times to the present. Authors to be read during the first semester (101a) include: Taylor, Edwards, Franklin, Cooper, Emerson, Thoreau, Poe, Hawthorne, and Melville; during the second semester (101b): Whitman, Twain, Howells, Dickinson, Jewett, Crane, James, Frost, Eliot, Faulkner, and Hemingway. Prerequisite: permission of the instructors.

Mr. Conron (Semester 1)

Both 101a and 101b are

Mr. Beard (Semester 2)

offered every year

105 AMERICAN POETRY/ Discussion

A study of selected American poets in light of a common theme or poetic form, this course is designed to introduce students to the close reading of poetry and to the question of its relation to American culture. In 1984, the theme will be "The Poet in a Landscape: American Versions of Pastoral Poetry," and the poets to be studied will include Ralph Waldo Emerson, Emily Dickinson, Robert Frost, William Carlos Williams, Maxine Kumin, and Donald Hall.

Mr. Conron

Offered every year

110 INTRODUCTION TO HISTORY AND AMERICAN STUDIES

See History 110.

112 INTRODUCTION TO SHAKESPEARE/ Lecture

Designed for any student who wants an introduction to Shakespeare, this course studies several major plays in detail, stressing interaction of plot and character while relating each play to common human situations and moral dilemmas. Particular attention is paid to *values*, what they are, and how the characters deal with them. Plays to be read include *The Merchant of Venice*, *Measure for Measure*, *Macbeth*, *Hamlet*, and *The Tempest*. Prerequisite: Verbal skills course or permission of the instructor.

Ms. Vaughan

Offered every year

115 FICTION BY WOMEN WRITERS, 1688-1899/ Lecture

Authors read will include Behn, Burney, Austen, Shelley, the Brontës, Eliot, Gilman, Chopin. The emphasis in this course is upon these women authors' and their characters' reactions to, and interactions with, the historical atmospheres and landscapes of their respective ages. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger

Offered every other year

116 MODERN FICTION BY WOMEN WRITERS/ Lecture

The selection of authors and works is based on three major concerns: that the literature read represent a chronological span, that it preserve a certain thematic coherence, and that it allow ample opportunity for discussion of aesthetic matters. The course is concerned with works written in the twentieth century that provide portraits of women in all stages and conditions of life rendered in a broad spectrum of fictional techniques. Authors studied include Gertrude Stein, Djuna Barnes, Katherine Mansfield, Virginia Woolf, Katherine Ann Porter, and Doris Lessing. Prerequisite: Verbal skills course or permission of instructor.

Ms. Hilsinger

Offered every other year

120 WRITING FOR MAGAZINES/ Workshop, Lecture

Designed to help students develop appropriate styles for submission of expository articles to magazines and newspapers. Writing assignments are heavy; reading is in contemporary periodicals. There are occasional guest speakers. Prerequisite: permission of instructor.

Ms. Tovey

Offered every year

125 THE SHORT STORY/ Lecture

Involves the intensive reading of a wide range of stories that exemplify a variety of fictional methods, affording the student some knowledge of the history of this literary type. The primary aim is to help the student develop an appreciation of the relationship between the methods and the broadly human values implicit in the short story. Prerequisite: verbal skills course or permission of instructor.

Mr. Elliot

Offered every year

129 MODERN DRAMA

Refer to course description under Theater Arts 154.

139 LITERATURE AND SCIENCE/ Lecture, Discussion

Traces the impact of scientific discovery upon literature and the literary accomplishments of scientists. The course is thus a study both in the history of ideas and in literary style. Student research will be encouraged.

Mr. Blinderman

Offered on a regular basis

141 ETYMOLOGY/ Lecture, Discussion

To increase students' vocabularies through a study of the history of the English language—from its Indo-European source to contemporary slang additions.

Mr. Blinderman

Offered on a regular basis

143 MODERN BRITISH FICTION/ Lecture

Deals primarily with the work of five twentieth-century British writers of fiction: Joyce, Lawrence, Woolf, Forster, and Lessing. Prerequisite: verbal skills course or permission of instructor.

Ms. Hilsinger

Not offered on a regular basis

144 MODERN AMERICAN FICTION/ Lecture, Discussion

A critical introduction to the best American fiction from about 1900 to 1960, with emphasis on its aesthetic values, sociological insights, and philosophical implications. Authors read will include Dreiser, Anderson, Fitzgerald, Hemingway, Capote, Faulkner, Ellison, Mailer, and others.

Mr. Beard

Offered every year

146 CONTEMPORARY COMPARATIVE NARRATIVES/ Lecture

A study of representative contemporary fiction written between approximately 1960 and the present. Comparisons among American, British, and European writers such as Percy, Lessing, Kundera, Boll, Duras, Gardner, and Calvino focus on their depictions of the role of fiction-making in contemporary society. Emphasis is also on the students' ability to make such comparisons. Prerequisite: verbal skills course or permission of instructor.

Mr. Elliot

Offered every year

153 ENGLISH POETRY/ Lecture, Discussion

Focuses on the development of the most important forms, themes, and movements in English poetry. The first semester, required for the English major, emphasizes intensive study and discussion of individual poems; it includes a series of essays on assigned topics, and fulfills the *verbal expression*, requirement. The second semester emphasizes the work of a small number of major poets from the middle of the sixteenth century to the middle of the twentieth century, and fulfills the aesthetics perspective requirement.

Ms. Hilsinger and Mr. Sultan (153a)

Both 153a and 153b

Mr. Sultan (153b)

are offered every year

154 ENGLISH FICTION/ Lecture

An exploration of British narrative and fictive modes from the eighteenth century to the twentieth. In the first semester, texts include, among others, *Roxana*, *Tom Jones*, *Tristram Shandy*, and *Pride and Prejudice*. Writers considered in the second semester include, among others, Brontë, Dickens, Lewis Carroll, and Hardy. Close attention is paid both to texts and their intellectual contexts. Prerequisite for 154a: verbal skills course; for 154b, 154a or permission of the instructor.

Ms. Tovey

Offered every other year

155 ENGLISH DRAMA/ Lecture

A course in the major periods of the English drama and theater before the twentieth century. The first semester covers the medieval theater, and the drama of Tudor, Jacobean, and Caroline England. The second semester

covers the period from the 1660s to the 1960s. No prerequisite. Also listed for credit as Theater Arts 155.

Ms. Vaughan, Mr. Sultan

Offered every other year

161 ADVANCED CREATIVE WRITING/ Workshop

Admission by permission of instructor, who will require a sample of the student's work. Enrollment limited to 10 students. Like most of our other writing courses, English 161 is graded on a credit/no record basis.

Staff

Not offered on a regular basis

172 EUROPEAN ROOTS OF AMERICAN SPACE: THE CROSS-ATLANTIC EXPERIENCE/ Seminar

An examination of the European images of the known world at the time of the discovery of America, and of how these early notions affected later thought about America in the areas of the arts, geography, and philosophy. With the use of literature, film, and other artistic forms, specific models are studied in a variety of contexts: the island, the city, the garden, the frontier, the general contrast between primitive and civilized spaces. Also listed for credit as Geography 172. Enrollment is limited to 15 students.

Mr. Conron

Offered every other year

183 THE LANGUAGE OF BIOLOGY/ Lecture, Discussion

A study of Latin and Greek roots and affixes that constitute biological terms in disciplines such as paleontology, taxonomy, and medicine. Crosslisted with Biology 183.

Mr. Blinderman

Offered on a regular basis

203 MEDIEVAL LITERATURE/ Seminar

A study of the literature of the Middle Ages, with special emphasis upon the literature of England. Readings will include *The Song of Roland*, *The Romance of the Rose*, *Dante's Inferno*, *Sir Gawain and the Green Knight*, the *Pearl*, selected lyrics and plays, Malory's *Morte D'Arthur*, Christine de Pisan's *Book of the City of Ladies*, and selections from the *Canterbury Tales*. Prerequisite: permission of the instructor.

Ms. Vaughan

Not offered on a regular basis

206 CHAUCER/ Seminar

A study of *Troilus and Criseide* and the best of the *Canterbury Tales*, followed by a more rapid reading of Chaucer's earlier works. *The Book of the Duchess*, *The House of Fame*, *The Parliament of Fowls*, and the *Legend of Good Women*. Prerequisite: permission of the instructor.

Ms. Vaughan

Not offered on a regular basis

212 ADVANCED SHAKESPEARE/ Seminar

Approximately 20 plays are read through the year in a close examination of Shakespeare's development as a dramatist. The course also introduces students to recent developments in Shakespearean criticism and research techniques. Semester one covers Shakespeare's early plays, the histories and the mature comedies, ending with *Hamlet*. Semester two emphasizes the later tragedies and the romances. Open only to junior/senior English majors and students who have successfully completed English 112.

Ms. Vaughan

Offered at least once a year

220 STUDIES IN THE RENAISSANCE/ Seminar

Explores the poets, playwrights, and prose writers who shaped the English literary Renaissance. Authors to be studied may include Thomas More, Philip Sidney, Edmund Spenser, John Donne, William Shakespeare, George Herbert, Ben Jonson, Andrew Marvell, Robert Herrick, John Milton, Thomas Browne, and John Dryden. Their writings are placed within the socio-political context of the sixteenth and seventeenth centuries. Permission of the instructor required.

Ms. Vaughan, Ms. Tovey

Not offered on a regular basis

222 MILTON AND THE RESTORATION DRAMA/ Seminar

An intensive reading of Milton's poems and selected Restoration plays by Wycherley, Etherege, Dryden, Congreve, and others. Prerequisite: permission of instructor.

Ms. Tovey

Not offered on a regular basis

228 JANE AUSTEN/ Seminar

A close study of Jane Austen in the context of the literary and social concerns of the late eighteenth- and early nineteenth-centuries. The bulk of the reading is in Austen: Texts include all of the mature novels, as well as the unfinished works and selections from the *Juvenilia*. The course will also address writers whose works inform and influence Austen, such as Burney, Radcliffe, Johnson, and Cowper. Prerequisite: permission of the instructor.

Ms. Tovey

Not offered on a regular basis

236 BRITISH ROMANTIC LITERATURE/ Seminar

An examination of the subject from different perspectives—philosophical, biographical, and critical. To uncover what the Romantic sensibility is—how it relates to nature, love, revolution—we study selected works of the major Romantic authors: Burns, Blake, Wordsworth, Coleridge, Shelley, and especially Keats and Byron.

Mr. Blinderman

Offered every other year

239 AMERICAN LITERARY RENAISSANCE/ Seminar

Characteristic writings by Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman are examined and juxtaposed dialectically to explore the uniqueness of their individual and collective accomplishments and their larger implications in the context of American culture. Field trip to Concord and possibly elsewhere. Prerequisite: permission of instructor.

Mr. Beard

Offered every year

240 AMERICAN CULTURE AND SOCIETY, 1820-1860/ Discussion

An interdisciplinary study of the emergence of America as a nation and as a culture. The course concentrates on the conflict between the ideals of individualism, nature, and community and the realities of changing social conditions. Attention is paid to some significant patterns of Jacksonian thought and politics, to cultural geography, and to the arts (literature, painting, and architecture). There are several field trips. Enrollment limited to 25 students. Also listed for credit as History 240.

Mr. Conron, Staff

Offered every year

241 AMERICAN THOUGHT AND CULTURE SINCE 1860/ Discussion

An interdisciplinary study concentrating on the American city since 1860. Cultural patterns and themes studied include the interrelation of ideals of

community and changing social organization and the role of some ideas (Darwinism, the realist and modernist aesthetics) in perceptions of the city. The course includes perspectives of history, geography, sociology, and the arts (primarily literature, painting, film, and photography). Enrollment limited to 25 students. Also listed for credit as History 241.

Mr. Conron, Staff

Offered every year

242 VICTORIAN LITERATURE/ Seminar

Although popularly considered a time of conformity as well as hypocrisy, the Victorian period did in fact boast a number of radical writers who offered novel solutions to problems like those troubling us today: racial and sexual prejudice, assembly-line mechanization, political tyranny, "scientific creationism," imperialism, and alienation. The first semester of this course studies literary contributions, both sane and insane, to the design of a better world. The second semester studies the nature of the aesthetic experience: Pre-Raphaelites and Decadents.

Mr. Blinderman

Offered every other year

244 ROMANTIC AND VICTORIAN GOTHIC/ Seminar

This seminar calls forth the Gothic spirit from its residence in graveyards. We'll encounter Frankenstein's monster, Heathcliff, Dracula, transvestites, and other aberrations infesting Gothic poetry and prose from the mid-eighteenth century to the present. Films and a field trip.

Mr. Blinderman

Offered every other year

245 DARWINISM/ Seminar

Interdisciplinary in nature, devoted to the study of original and research materials elucidating the scientific, philosophical, religious, and social dimensions of Darwinism. The course examines chiefly the survival of the fittest Darwinian ideas in English and American literature. Prerequisite: permission of instructor.

Mr. Blinderman

Offered every other year

248 STUDIES IN NARRATIVE FORM: CLUSTER COURSE

An exploration of narrative both structurally and historically with an emphasis on literary fiction as a particular kind of narrative form. We will follow the evolution of narrative in Western literature through the aesthetics of realism and modernism as they have been elaborated in fiction and in critical theory. The relevance of nonliterary narrative to the understanding of fiction also is discussed. Texts will include both novels and films.

Mr. Conron, Mr. D'Lugo

Not offered on a regular basis

249 AMERICAN REALISM/ Seminar

Explores the artistic assumptions underlying American realism through selected works of America's best-known realists, as selected from Twain, Howells, James Crane, Norris, and Dreiser. We also pay some attention to the development of each writer by reading samples of his early and later work. Prerequisite: permission of instructor.

Mr. Elliott

Offered every year

256 HARDY AND LAWRENCE/ Seminar

A concentration on the novels of Thomas Hardy and D.H. Lawrence. The two writers have affinities both personal and ideological. Taken together, their works span the late nineteenth and early twentieth centuries, and so offer contrasting perspectives on an important transitional period. Hardy

writes at the end of the Victorian era, Lawrence at the beginning of the modern. Hardy looks back, Lawrence forward; Hardy's stance is social and nostalgic, Lawrence's psychological and apocalyptic. Each illuminates the other and each reflects the intellectual currents of the time. Readings include the major novels of each author and selections from essays and letters. Prerequisite: permission of instructor.

Ms. Tovey

Offered spring, 1984-85

257 THE IRISH LITERARY MOVEMENT/ Seminar

A course in the inception, development, and effect of the literary movement during the end of the last century and the first decades of this one that created an Irish literature in English. Writers studied include Yeats, Joyce, Synge, and O'Casey. The cultural, historical, and political backgrounds of Anglo-Irish literature are also studied. Prerequisite: permission of instructor.

Mr. Sultan

Not offered on a regular basis

Offered fall, 1984

259 MODERNIST POETRY/ Discussion

A survey, with special attention to the genesis and development of modernism and to tendencies toward a new movement in English poetry. The works of almost 50 poets, ranging in time from Emily Dickinson to Robert Creeley, are considered.

Mr. Sultan

Offered every other year

261 W.B. YEATS/ Seminar

An intensive study of the accomplishment of Yeats. The principal concern is his poetry, but attention is given to his thought, his dramatic and other writings, and his cultural role in Ireland and the world during his time. Prerequisite: permission of the instructor, or one of the following: *English Poetry*, *The Irish Literary Movement*, *T.S. Eliot*.

Mr. Sultan

Not offered on a regular basis

264 T.S. ELIOT/ Seminar

An intensive study of the major poems, plays, and critical essays of T.S. Eliot. Prerequisite: permission of instructor.

Ms. Hilsinger

Not offered on a regular basis

266 VIRGINIA WOOLF/ Seminar

An intensive study of Woolf's nine novels, her short stories, her major essays, and her diary. The course emphasizes the artistic process as well as the vision of Woolf's work and considers such collateral issues as Woolf's critical stance and her feminism. Prerequisite: permission of instructor.

Ms. Hilsinger

Not offered on a regular basis

267 SPECIAL STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE: HEMINGWAY AND FAULKNER/ Seminar

Devoted to the intensive study of a twentieth-century writer or small group of writers. Prerequisite: permission of instructor.

Mr. Beard

Offered every other year

268 EUGENE O'NEILL/ Seminar

An intensive study of about 20 of O'Neill's plays, from the early one-acters to *The Iceman Cometh*, *Long Day's Journey into Night*, and *A Moon for the*

Misbegotten, with some attention to ideas, persons, and theatrical movements affecting O'Neill. Prerequisite: permission of instructor.

Mr. Beard

Not offered on a regular basis

Offered spring, 1985

273 F. SCOTT FITZGERALD AND THE TWENTIES/ Seminar

American literature experienced a rebirth in the 1920s. Using F. Scott Fitzgerald's writings as convenient points of reference, the seminar examines, with particular attention to experiments in expression, works by such writers as Gertrude Stein, E.E. Cummings, T.S. Eliot, Sherwood Anderson, Ernest Hemingway, Sinclair Lewis, William Faulkner, Eugene O'Neill, William Carlos Williams, and Wallace Stevens. Interrelationships among the arts significant in the development of new forms and modes of expression are stressed. Prerequisite: permission of instructor.

Mr. Beard

Not offered on a regular basis

279 THE AMERICAN LANDSCAPE/ Discussion

An interdisciplinary course on the American landscape, with emphasis on the perceptions of travelers and inhabitants as they are expressed in literature. The historical range, from the sixteenth to the twentieth century, allows considerations of several major stages in the history of these perceptions. Readings also are drawn from cultural geography and from art history. The course is taught as part of a cluster including Geography (Professor Johnson) and Art (Professor Grad). Limited to 20 students. Permission of instructor required.

Mr. Conron

Some version of this course
is offered every year

281 THE DEVELOPMENT OF THE ENGLISH LANGUAGE, I & II/ Lecture, Discussion

The first semester (I) deals with the development of the phonology and lexicon of English, viewed as a dynamic series of systems. The course also describes the homeland, language, and culture of the Proto-Indo-Europeans as background for a treatment of the structural relationships between English and other languages of the Indo-European family. The second semester (II) concentrates on the development of the grammar of English, also treated dynamically and systemically. The course includes an analysis of the establishment of Standard British English, the doctrine of correctness, and the growth of Modern American English in its sociocultural setting. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

282 OLD ENGLISH/ Lecture, Translation

An introduction to Old English language and literature. The works read include King Alfred's preface to Pope Gregory's *Pastoral Care* and selections from the West Saxon Gospels, from the Old English translation of the Heptateuch, from Aelfric's *Colloquy*, from the Anglo-Saxon Chronicle, and from the Old English translation of Bede's *Historia Ecclesiastica Gentis Anglorum*. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

284 MODERN AMERICAN ENGLISH/ Seminar

Analyzes the grammatical structure of Modern American English. Concentrates on an evaluation system for handling spoken and written English

and the application of this system to problems of current English usage. The relevance of linguistic theory and methodology of the teaching of English receives special attention. Prerequisite: permission of instructor.
Mr. Macris Not offered on a regular basis

285 SEMANTICS/ Lecture, Discussion

Deals with and classifies the changes in the meanings of words and phrases and analyzes simile and metaphor. The course also deals with the parametric organization of the semantic system. Some attention is paid to the relation between thought and language. Prerequisite: permission of instructor.

Mr. Macris

Offered every year

286 LINGUISTIC APPROACHES TO LITERATURE/ Seminar

A study of what modern linguistics has to offer in the analysis and criticism of literature, with special attention to the contributions of the transformational-generative, tagmemic, and parametric approaches. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

287 INTRODUCTION TO LINGUISTICS/ Lecture, Discussion

Devoted to the theory and methodology of descriptive linguistics. Deals with the nature and function of language, animal communication, the relation between speech and writing, phonology, morphology, syntax, lexicology, the sociocultural setting of language, the contact of linguistic systems, and the problems of "correctness." Emphasis is placed upon the dynamics of systems analysis. Prerequisite: permission of instructor.

Mr. Macris

Offered every year

290 COMPARATIVE AND HISTORICAL LINGUISTICS/ Lecture, Discussion

Examines the theory and methodology of comparative and historical linguistics. Focuses on problems in analyzing languages with and without a literary tradition, the comparative method and reconstruction, glottochronology, linguistic borrowing, and linguistic geography. Emphasis is placed on the dynamics of systems analysis. Prerequisite: permission of instructor.

Mr. Macris

Not offered on a regular basis

295 TEACHING ENGLISH AS A SECOND LANGUAGE/ Lecture, Discussion

Covers the principles and practice of second-language teaching, with emphasis on the application of modern linguistics to the teaching of English as a second language. Prerequisite: permission of instructor. Also listed for credit as Education 265.

Mr. Macris

Not offered on a regular basis

297 VARIETIES OF LITERARY CRITICISM/ Seminar

Using a small number of model literary works, this course explores the theory and practice of alternative critical perspectives and schools of criticism. Prerequisite: permission of instructor.

Mr. Sultan

Offered every other year

298 THE MYTHOPOETIC MODE/ Seminar

Explores the vision and epistemology of mythopoetic literature. Works read and discussed include Shakespeare's *Henriad*, Milton's *Paradise Lost*,

Brontë's *Wuthering Heights*, Melville's *Moby Dick*, and a work of the modern period. Candidates for honors in English are encouraged to elect either this seminar or English 297 in their junior year. Prerequisite: permission of instructor.

Ms. Hilsinger

Offered every year

299.1 DIRECTED READINGS

Offered for variable credit.

Staff

299.5 SPECIAL PROJECTS

Offered for variable credit.

Staff

Note: When asking an instructor to sponsor Directed Readings (299.1) or a Special Project (299.5), the student should: (1) demonstrate competence to deal with the materials as literature, and (2) present a well-thought-out proposal. The student must have taken the initiative in selecting readings or carrying out a special project.

299.8 HONORS IN ENGLISH: SENIOR YEAR

A student who plans to take Honors in English should choose a subject and an adviser and apply to the department chair before the end of junior year. At the student's discretion and with the adviser's approval, a student may register for an *Honors in English* project, which will carry one or two credits. If the project warrants two courses, credit for one semester's *Directed Reading* and one semester's *Directed Writing* can be arranged simultaneously or in sequence. The adviser and the student will agree on deadlines for the project's stages, but the department requires a first draft by the first Monday in April. A complete thesis is due one week before the last day of classes. A second reader, chosen by the student and the adviser, participates in the final evaluation. In no case will honors be granted to any student who fails to meet both deadlines (although the project still qualifies for course credit and a grade).

Staff

299.9 INTERNSHIP

Offered for variable credit.

Staff

300 INTRODUCTION TO GRADUATE STUDY IN ENGLISH/ Seminar

Examines certain fundamental aspects of literary theory and considers the nature of and relationships among the three principal areas in the discipline—bibliography and textual analysis, literary history, and literary criticism. M.A. candidates not specifically exempted are required to take this course.

Mr. Sultan

Offered every fall semester

349 THESIS WORKSHOP

Involves the doing—though not necessarily the completion—of a scholarly-critical project in literature on a professional level. The entire process from initial formulation to final presentation will be considered in the context of the specific individual projects of students in the group. A prerequisite is active commitment to and involvement in such a project.

Mr. Beard

Offered every year

350 MASTER'S THESIS

Prerequisite: permission of department chair or director of graduate studies.

Staff

399.1 GRADUATE DIRECTED READINGS

May be elected by students who want to pursue in depth a topic other than that chosen for the master's thesis. Prerequisite: permission of instructor and department chair or director of graduate studies. Offered for variable credit.

Staff

COMPARATIVE LITERATURE

A student may count any of the courses listed under Comparative Literature toward the English major. In all cases, such electives must be approved by the student's adviser in the English Department as being meaningfully related to the student's overall program of English studies. The four core courses of the Comparative Literature Program—Comparative Literature 110, 230, 240, 251—are especially recommended.

Environment, Technology and Society

PROGRAM FACULTY

Christoph Hohenemser, Ph.D., *chair*: physics, technology assessment, risk analysis and hazard management

John A. Davies, Ph.D.: physics, energy analysis

Dennis Ducsik, Ph.D.: environmental policy, energy policy, coastal zone management

Robert L. Goble, Ph.D.**: physics, energy studies, atmospheric transport, risk analysis and management

Frederick T. Greenaway, Ph.D.: chemistry, environmental analysis

Roger E. Kasperson, Ph.D.: geography, environmental policy and decision making, hazard management, resource management

Robert W. Kates, Ph.D.**: geography, climate impact assessment, natural and technological hazards, environmental policy

Sharon E. Nicholson, Ph.D.: physical geography, meteorology, climatology

John T. Reynolds, Ph.D.***: microbiology, water pollution control, public health

Harry E. Schwarz, B.C.E.*: water resources engineering, hydrology, regional and environmental planning

Billie Lee Turner, Ph.D.: geography, cultural ecology and agriculture

PART-TIME FACULTY

Paul A. Erickson, M.A.: environmental policy, environmental impact assessment

David Major, Ph.D.: resources economics, water resources planning, project evaluation

* Graduate student advisor

** On leave, 1984-85

*** On leave, fall 1984

PROGRAM

Environment, Technology and Society (ETS) is an interdisciplinary program which emphasizes policy questions involving the environment and the use and misuse of science and technology. The goal of the program is to produce individuals who are able to deal with technical issues in a social and political context and who do so with an acute awareness of the short- and long-range limitations of the natural environment. The ETS program offers an undergraduate major and two master of arts degrees, in environmental affairs and in technology assessment and risk analysis.

Participating faculty are drawn from a number of departments and disciplines and have research interests in a wide range of societal problems, including environmental science and management, energy and technology policy, and assessment and control of technological hazards. Faculty interests, which are focused on both the developed and developing world, offer students the chance to participate in research.

The ETS Program, new in 1984-85, combines and enhances the long established programs in Science, Technology, and Society and Environmental Affairs. Graduates of these programs have taken positions in private industry and government doing work that involves policy analysis and formulation, planning, risk analysis, and environmental impact assessment. Students have also gone on to other graduate fields or have pursued careers in professions such as medicine or law.

UNDERGRADUATE MAJOR

The degree requirements for an undergraduate ETS major are designed to ensure that students acquire a firm foundation in natural science with considerable exposure to social science/public policy perspectives. Achieving literacy in natural science is especially important for two reasons: (1) many significant problems are accessible only with a thorough grounding in natural science and (2) there is a significant need for managers of science, technology, and environment whose technical background is more than perfunctory.

Accordingly, the requirements for the undergraduate ETS major are ten semesters of basic natural science and mathematics, two semesters of basic social science, six semesters of environment, technology, and society, including a capstone project. Most of the required ETS courses are multidisciplinary and involve a significant component of social science and public policy. The eighteen-course major requirements are specified in the following table.

REQUIREMENTS FOR THE MAJOR

- (a) Basic literacy in natural science
 - 6 semesters in one discipline of natural science (physics, chemistry, biology, mathematics/computer science)
 - 2 additional semesters of unspecified natural science
 - 2 semesters of mathematics/computer science, one of which must be calculus
- (b) Basic literacy in social science
 - 2 semesters of basic social science (economics, government, geography, management)
- (c) ETS courses
 - 1 introductory course
 - 2 method and analysis courses
 - 2 problem oriented courses
 - 1 semester course equivalent of capstone research, involving a thesis, a research project, or an internship

All student programs must be specifically approved by the undergraduate adviser. In this connection, students should note that ETS courses crosslisted by natural and social science departments may not be used to meet the basic literacy requirements in natural and social science.

ETS majors are encouraged to strengthen their educational experience by working in academic year internships and/or paid summer jobs related to their goals and interests. These positions are often obtained with the advice and assistance of the program committee, whose members have contact with numerous organizations. Examples of placements in recent years include the Town of Holden Conservation Commission, the Massachusetts Energy Office, the Scientists' Institute for Public Information, the Central Massachusetts Regional Environmental Council, the Massport Office of Noise Control, the Central Massachusetts Air Pollution Control District, and the Massachusetts Office of Coastal Zone Management.

The ETS Program also seeks to facilitate the involvement of undergraduates in faculty research. Much of this research is housed in the University's Center for Technology, Environment and Development (CENTED); the remainder is located in participating departments. Detailed, up-to-date information on research opportunities is available from individual program committee members and from the program office.

Honors in environment, technology, and society are awarded upon presentation and oral defense of an undergraduate thesis. Students who wish to receive honors must have attained at least a 3.0 grade point average in ETS-required courses by their junior year and are encouraged to begin work the following summer on a project or internship that can be extended into a thesis during the senior year.

INTEGRATED B.A./M.A. DEGREE

Because an undergraduate liberal arts education, even with an ETS major, leaves only a modest amount of time for intensive study of ETS subject matter, the program offers an integrated B.A./M.A. option involving a total of five years of study. Under this plan, students complete an undergraduate major in the first four years, and an M.A. degree during the fifth.

Majors in any undergraduate field are acceptable for the M.A. degree. ETS majors are admitted to the B.A./M.A. program without additional requirements. Majors in other disciplines must supplement departmental requirements, with a number of preparatory courses, as shown in the table below. The preparatory courses in most instances count as part of the "extended major" requirements of various departments, and thus are not difficult to satisfy. With approval of the graduate adviser, students in the combined B.A./M.A. program may count, toward the graduate requirement, any 200-level undergraduate courses completed with a grade of B- or better.

A request for admission to the combined B.A./M.A. program is normally made to the program chair during the junior year, and will be granted if the student presents an acceptable program of undergraduate study and a cumulative average of B- or better. ETS 201-204 (total two course credits) are normally required for non-ETS majors entering the B.A./M.A. program in their junior year.

UNDERGRADUATE REQUIREMENTS FOR B.A./M.A. STUDENTS WHO MAJOR IN STANDARD DISCIPLINES

- (a) Major in natural science and mathematics/computer science
- (b) Basic social science
 - 1 semester of economics
 - 1 semester of geography or government

- (c) ETS courses
 - 1 introductory course
 - 2 methods and analysis courses
 - 2 problem oriented courses
- TOTAL: Major + 7 courses

* * *

- (a) Major in social science, including history
 - (b) Basic natural science
 - 2 semesters of biology
 - 2 semesters of physics or chemistry
 - 1 semester of calculus
 - 1 semester of statistics
 - (c) ETS courses
 - 1 introductory course
 - 2 methods and analysis courses
 - 2 problem oriented courses
- TOTAL: Major + 11 courses

* * *

- (a) Major in humanities, excluding history
 - (b) Basic natural and social science
 - 2 semesters of biology
 - 2 semesters of chemistry or physics
 - 1 semester of calculus
 - 1 semester of statistics
 - 1 semester of economics
 - 1 semester of geography or government
 - (c) ETS courses
 - 1 introductory course
 - 2 methods and analysis courses
 - 2 problem oriented courses
- TOTAL: Major + 13 courses

MASTERS DEGREES

Two master of arts degrees are offered. The M.A. in Environmental Affairs trains students for entry level professional positions in the expanding fields of environmental planning, management, and education. The M.A. in Technology Assessment and Risk Analysis (Graduate Board approval pending) trains students in evaluating the benefits and hazards of technology and may lead to further graduate work or entry level positions in the fields of environmental and occupational health and safety.

Ten course units are normally required for each degree. Five of these units are usually earned in a classroom setting, and three through a combination of research participation, internship, and teaching experience. The thesis or terminal project accounts for the remaining two. Either a research project or a teaching experience must be presented. An internship, although not required, is highly recommended. All graduate plans of study must be presented to and approved by the graduate adviser.

Students from other institutions or from Clark are admitted to the masters program upon application to the program office. Clark students who have been previously admitted to the integrated B.A./M.A. program, and who complete the requirements for this program, may count any two 200-level courses, internships, or research projects toward the ten-course requirement of the M.A. degree. These courses must have approval of the graduate adviser and must be completed with a B- or better. Students from

other institutions may be given credit for two advanced courses if these would have met the requirements for Clark students.

Some financial aid in the form of tuition remission is available for qualified students.

INTRODUCTORY COURSES

101 INTRODUCTORY CASE STUDIES/ Lecture, Discussion

Introduces the student to technology assessment and environmental policy via a series of illustrative cases, drawn from population and food, land, and water resources, energy conservation, pollution control, and arms control. Both writing and quantitative methods are emphasized so that students will become aware of the multi-disciplinary approach needed in analysis of the cases. An integrative paper or presentation plays a major role in the course.

Mr. Ducsik, Mr. Hohenemser

Offered every semester

102 INTRODUCTION TO ENVIRONMENTAL MANAGEMENT/ Lecture, Discussion

Explores some of the basic concepts and problems involved in the study of natural resources and environmental management. This is accomplished by examining the physical principles, management practices, and environmental issues involved in three major cycles of the biosphere: the hydrologic, the carbon, and the nuclear fuel cycle.

Mr. Kates, Staff

Offered every year

103 ENVIRONMENT 198-/ Lecture, Discussion

An assessment of major environmental issues, both national and global in nature, confronting the United States in each current year. Particular attention is given to problems requiring governmental action: acid rain, hazardous chemical wastes, the renewal of the clean air act, long-term energy planning, world water shortages.

Mr. Kasperson

Offered every year

METHODS AND ANALYSIS COURSES

155 THE ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT/ Lecture

Reviews political and economic problems associated with such natural resources as agricultural land, energy goods, and minerals—as well as a resource common to all of us, our natural environment. Typical issues to be analyzed include the assessment of environmental impacts within a market economy, the potential role of international cartels in resource allocation, and the assessment of nuclear generation from an economic standpoint.

Mr. Major, Mr. Shakow

Offered every other year

201 APPLICATION OF SYSTEMS ANALYSES TO ENVIRONMENTAL PROBLEMS/ Lecture

Systems analyses as a tool for problem solving is the focus of this course. The fundamental concepts and their application to environmental problems are discussed. Stress is on the use, applicability, and limitations of this method in analyzing complex environmental systems and their physical, social, and economic aspects. Prerequisite: some knowledge of basic algebra. A seven-week course offered for half credit.

Mr. Schwarz

Offered every year

202 THE BIOSPHERE/ Lecture

Building on a foundation of general knowledge of physiology, genetics, taxonomy, and ecology, the course provides a biological context and perspective for the analyses and assessment of manmade environmental hazards. Prerequisite: introductory course in biological science or concurrent registration in such course with permission of instructor. A seven-week course offered for half credit.

Mr. Erickson

Offered every year

203 ENVIRONMENTAL COGNITION AND BEHAVIOR/ Lecture, Discussion

Selected themes of environmental behavior are examined. Some of these are: how individuals and groups construct their experience of the environment, how this construction relates to their behavior, how we go about discovering the nature of individual perception and the perception-behavior link, what this knowledge contributes to environmental planning and design. A seven-week course offered for half credit.

Staff

Offered every year

204 ENVIRONMENTAL PLANNING/ Lecture, Discussion

An overview of environmental planning from a broad, general point of view. The planning process, the techniques used, the institutions involved are examined. A case study serves as one of the vehicles to analyze planning. A seven-week course offered for half credit.

Mr. Schwarz

Offered every year

205 ENVIRONMENTAL PROTECTION LAW/ Lecture, Discussion

A free-wheeling discussion of pollution control in the real world, its legal, institutional, and political framework. Federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizen suits"; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy versus ecology; old tools, new tools, potential for change. Includes reading in multilithed materials—statutes, regulations, court documents, case decisions, news accounts, and journal articles. Informal student advocacy panels to assure balanced presentation of issues.

Staff

Offered every other year

210 SOCIOENVIRONMENTAL IMPACT ANALYSIS/ Lecture, Discussion

Provides an overview of the theories, methods, and models used in assessing the social and environmental effects of planned development. Attention is given to both empirical and ethical issues. Cases are analyzed in terms of the available policy and institutional means (such as social impact statements), as well as the critical literature on the subject. The goal is to equip the student with both analytical skills and a critical perspective necessary to evaluate the social aspects of major projects and facilities.

Mr. Kasperon

Offered every other year

216 ENVIRONMENTAL IMPACT ASSESSMENT/ Lecture

Analysis and evaluation of impacts of federal programs and projects on inter-related physical and social components and dynamics of the human environment. Methodological as well as conceptual requisites for the interdisciplinary analysis and evaluation of impacts are discussed. Special emphasis is given to the management of the assessment team as a key

factor in meeting the environmental goals of impact assessment under the National Environmental Policy Act of 1969 (NEPA). Relevant case studies are selected from a wide variety of domestic and international programs.

Mr. Erickson
Offered every other year

Offered every other year

226 HOW SAFE IS SAFE ENOUGH: RISK ASSESSMENT AND HAZARD MANAGEMENT/ Lecture, Discussion

For advanced students this is an introduction to the theory and methods of risk assessment and hazard management of technological hazards. Case study material is drawn from concurrent research, including hazards of consumer products, energy production, toxic chemicals, and transportation.

Mr. Kates

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION/
Lecture

Introduction to the theory of multiobjective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects together with selected applications.

Mr. Major

Offered every other year

265 QUANTITATIVE METHODS OF RISK ANALYSIS/ Seminar

For advanced students, an introduction to quantitative methods in risk analysis, including fault-tree analysis, dose-response consequence models, risk benefit analysis, and cost-effectiveness analysis, and quantitative methods for risk comparisons. Applications to auto accidents, nuclear power, cigarette smoking, and radiation health effects.

Mr. Hohenemser, Mr. Goble

Offered every other year

288 SEMINAR IN ETHICS AND RISK/ Seminar

An intensive study of the conceptual and methodological problems involved in defining and measuring risk, of some central philosophical principles of morality and distributive justice, and of the special methods by which such principles can be applied to policy problems regarding the management of complex technological hazards. Cases studied vary by year; in 1985 they will be radioactive waste management and the allocation of risks between workers and publics. Prerequisites: four courses in philosophy or advanced standing in a relevant physical or social science.

Mr. Derr

Offered every other year

COURSES ON ENERGY PROBLEMS

130 ENERGY SOURCES AND SYSTEMS/ Lecture, Discussion

An introduction to the subject of energy for ETS majors and others interested in the utilization of fossil fuels, solar and wind power, geothermal energy, and nuclear fission and fusion. Emphasis is placed on basic concepts, thermodynamic principles, efficiency of use, and methods of converting both energy and energy resources from one form to another. The course provides the necessary background for those planning more detailed study of energy technology and/or policy and also satisfies the prerequisite for ETS 132, Alternative Energy Systems Laboratory.

Mr. Davies

Offered every other year

131 SOLAR ENERGY/ Lecture, Discussion

A critical survey of existing and proposed methods of utilizing solar energy, including a history of solar energy applications; the use of solar energy for space and water heating; the limitations imposed by thermodynamic laws and economic costs; and an analysis of methods of producing work from solar energy. No particular background in physical science beyond high school physics or chemistry is needed. Students are asked to analyze and evaluate simple systems quantitatively and become familiar with experimental solar devices.

Mr. Davies

Offered every other year

132 ALTERNATIVE ENERGY SYSTEMS LABORATORY/ Lecture, Laboratory

Designed to complement and augment ETS 131. The subject matter is approached by first developing the concepts of temperature, heat, and energy and then applying these ideas to alternative energy devices. Laboratory experiments include measurement of the performance of solar collectors, photovoltaic cells, and wind machines. Corequisite: Physics 111 or 112, or prerequisite: ETS 131. Limited. Two lecture and one laboratory per week.

Mr. Andersen, Mr. Davies

Offered every year

200 ENERGY CONSERVATION/ Lecture

Many experts believe that conservation offers a solution to the nation's long range energy problem that is far less costly, more protective of the environment, and quicker in implementation than measures to increase supply. This course evaluates the potential and the prospects for a low-energy future in the United States, with particular emphasis on the residential sector as a case in point. After an overview of patterns and trends in consumption, lectures span both the science and social science of increasing energy efficiency in the home. Two exams and a term paper.

Mr. Ducsik

Offered every other year

230 THE ENERGY FUTURE: PATHS AND POLICIES/ Lecture, Discussion

A wide-ranging examination of the global energy situation and the "crisis" facing our energy-intensive industrialized nation. In the first several weeks basic information is presented about trends and patterns in consumption, future availability of oil and other resources, and the environmental, economic, and social costs of energy production. The second half of the course focuses on alternative scenarios for the future, with emphasis on the potential role for conservation and factors affecting the emergence of an energy efficiency ethic. Some background in energy science or technology is helpful.

Mr. Ducsik, Mr. Hohenemser

Offered every other year

233 THE CAMPUS ENERGY SELF-STUDY/ Seminar, Projects

A course tied to faculty research aimed at improving the energy efficiency of the University's buildings and heating system. Topics currently under investigation are the technical and economic performance of the new cogeneration plant and monitoring of its air quality effects; heat loss characteristics of particularly inefficient buildings; and ability of student residents to reduce electricity consumption via inter-dormitory competition. Student work comprises a mix of field and laboratory measurements

and practical calculations, with seminar discussion providing the necessary theoretical background and introduction to the general literature.

Mr. Goble

Offered periodically

COURSES ON HEALTH AND HAZARD PROBLEMS

142 ENVIRONMENTAL CHEMISTRY/ Lecture, Laboratory

Focuses on the chemistry related to environmental problems, particularly aquatic chemistry and aquatic pollution. Equilibrium theory is developed as a model for aquatic chemistry, and chemical analyses of local aquatic systems are conducted in the laboratory according to Environmental Protection Agency procedures. Prerequisite: Chemistry 100. Two lectures and one four-hour laboratory per week.

Mr. Greenaway

Offered every year

232 SELECTED TOPICS IN MICROBIOLOGY AND PUBLIC HEALTH/ Lecture, Student Presentations, Discussion

Content varies from year to year. For advanced undergraduate and graduate students who have completed Biology 109 and at least one year of college chemistry. Permission of the instructor required.

Mr. Reynolds

Offered every year

235 ENVIRONMENTAL HEALTH/ Lecture, Discussion

Principles and approaches used during the management of selected problems in environmental health: risk assessment, environmental toxicology, drinking water standards, waste treatment practices and occupational health. Prerequisite: permission of the instructor. Students do not have to be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one or more of the basic sciences and a relevant background.

Mr. Reynolds

Offered every other year

238 ISSUES IN PUBLIC HEALTH/ Lecture, Discussion

Introduction to the principles and methods of study design with emphasis on epidemiology, followed by selected case studies illustrating approaches and problems associated with the resolution of policy questions in public health areas. Prerequisite: permission of the instructor. Students do not have to be biology majors but must be juniors, seniors, or graduate students who can demonstrate literacy in one or more of the basic sciences and a relevant background.

Mr. Reynolds

Offered every other year

248 HAZARDS OF THE WORKPLACE/ Lecture, Discussion

Surveys the trends and extent of occupational hazards in the United States and inquires into the adequacy of current data bases, public policy, and managerial effort. Attention is given to the performance of corporations, OSHA, labor unions, workers' compensation, and approaches to worker protection. Some cross-national comparisons are included. Alternatives to current managerial approaches are defined and discussed.

Mr. Kasperson

Offered every other year

COURSES ON ENVIRONMENTAL AND RESOURCE PROBLEMS

145 ENVIRONMENTAL MANAGEMENT AND RESOURCE DEVELOPMENT IN CHINA/ Lecture

A survey of the world's most important and complex set of environmental and resource problems: environmental management and resource development in China, the home of one-quarter of the earth's population. Land and water, agricultural resources, energy and pollution, urban areas, human resources, education and technology, natural and historic areas. Environmental and resource issues in the larger context of Chinese civilization. Prospects for the future.

Mr. Major

Offered every other year

220 WATER AND THE CITY

Water is plentiful in most parts of the U.S. but is not always available for future consumption, safe enough to drink, or clean enough for fishing and swimming. This course examines two aspects of the complex "water problem" as it exists in heavily populated urban areas: that of securing an abundant and healthful supply of drinking water and that of avoiding pollution in the disposal of municipal sewage. After a general presentation of information on water technology and related planning issues, concepts in governance are developed with reference to current case materials in Worcester, New York, and especially Boston. Two exams and a term paper.

Mr. Ducsik

Offered every other year

221 APPLIED SURFACE WATER HYDROLOGY/ Lecture, Problems

Focuses on practical application of hydrology for water resources management. Topics include rain fall/runoff relationship, hydrograph analysis, frequency studies of floods and droughts, reservoir operations, and flood routing. Both the techniques and the application to problems such as water supply and flood control are covered. Prerequisite: Geography 014 or permission of instructor.

Mr. Schwarz, Staff

Offered every other year

222 RIVER BASIN PLANNING/ Seminar

Concentrates on one river basin and the studies made and plans prepared to develop that river basin. Students work independently on specific sections of the case under consideration. Seminar sessions give participants the opportunity to present their independent work and discuss it in a broader context. Readings, discussions, and research focus on study objectives, techniques, and results, and relate them to the appropriate economic and social values.

Mr. Schwarz, Mr. Major

Offered every other year

231 POLITICS AND THE ENVIRONMENT/ Seminar

Intended for the student with professional career or advanced study objectives and organized about current research themes on selected policy issues. Each of these is treated in a two-week period which includes a state-of-the-art assessment, case applications, and short student position paper on an assigned question. Representative issues include the environmental movement, models of the policy process, mediation of environmental conflicts, the politics of risk, and the role of the mass media. Permission of instructor required.

Mr. Kasperson

Offered every other year

237 MANAGING THE COASTAL ENVIRONMENT/ Lecture

Barrier beaches, salt marshes, the waters above the continental shelf are among the most important and useful of our environmental resources, but also among the most seriously abused. This course is an introduction to the field of coastal zone management, practitioners of which must have some understanding of physical and ecological processes as well as of policy-making and law. Such literacy is developed with reference to specific cases involving, for example, problems of shore erosion in Maine and storm hazards and wetlands destruction in Massachusetts. Two exams and a term paper.

Mr. Ducsik

Offered every other year

256 PROBLEMS IN WATER RESOURCES PLANNING/ Problems course

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation, and the written and oral presentation, of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: a 200-level course in environmental assessment; physical geography; economics; or environment, technology, and society or permission of instructor.

Mr. Schwarz

Offered every other year

260 ATMOSPHERIC SCIENCE AND URBAN CLIMATOLOGY/ Seminar

Deals with the effect of cities on the climatic environment. Topics include air pollution, urban effects on weather variables (e.g. the "heat island" and rainfall), urban design as related to climate, and climatic modeling. Prerequisite: Introductory Physics or Geography 122.

Ms. Nicholson, Mr. Goble

Offered every other year

275 CITIZEN PARTICIPATION: THEORY AND APPLICATION/ Lecture, Discussion

Erosion of public confidence in the institutions and professionals charged with managing societal affairs has brought proposals that decision-making be conducted more openly and with fuller citizen participation. This course explores a range of issues surrounding this theme. Major theories regarding the nature, goals, and forms of participation are examined and contemporary experience with participatory programs is reviewed.

Mr. Kasperson

Offered every other year

276 PRACTICUM IN LAND USE DECISION MAKING/ Research seminar

Designed to provide exposure to decision-making in the real world for students who have already pursued environmental studies in the classroom. The basic approach is to combine a series of group discussion on the legal, technical, and political aspects of a given decision process (often with guest practitioners in attendance) with field work in which the students observe firsthand the activities of specific governmental bodies (through attendance at meetings/hearings, interviews with staff, review of public records, and so on). The current "laboratory" for the seminar is the municipal Conservation Commission, which in Massachusetts is the focal point for protection of wetlands, open space, drinking water supply, and

other land-related environmental resources. Grades based on journal notes and a research report.

Mr. Ducsik

Offered every other year

DIRECTED READINGS AND RESEARCH

297 CAPSTONE RESEARCH/ Seminar

Offers an opportunity to integrate the strands of the ETS major and/or to prepare a research proposal for a masters thesis. Specific topics for investigation are chosen, largely on the basis of student interest, from a broad array including global environmental threats, energy and other resource issues, arms control and disarmament, and technological risk assessment and management. Unlike a regular course, student presentations constitute a major portion of class meeting, with the instructor as a facilitator of discussion and as a general resource for the group. Students must be second-semester juniors or seniors, and must have completed a substantial fraction of their major requirements. The seminar is offered only if six or more students require it.

Mr. Hohenemser, Staff

Offered when needed

298 DIRECTED READINGS

Offered to students who want to pursue a specific topic on their own, with weekly tutorial assistance by a faculty member. By permission only.

Staff

Offered every semester

299 RESEARCH AND THESIS

Offered to students who want to conduct research under the guidance of faculty. The product of the research may be an undergraduate thesis acceptable for honors in Environment, Technology, and Society, or it may have another product, to be defined by the student and the faculty tutor. By permission only. Variable credit.

Staff

Offered every semester

Foreign Languages and Literatures

DEPARTMENT FACULTY

Marvin A. D'Lugo, Ph.D., *chair*: Hispanic literature and film, narrative theory

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology

Marcia Butzel, Ph.D.: French literature and film, Italian film

Carol C. D'Lugo, Ph.D.: Spanish and Spanish-American narrative, literary theory

William Ferguson, Ph.D.: Spanish Golden Age literature, twentieth century Hispanic literature, Spanish literature

Kenneth Hughes, Ph.D.: German and Russian language, nineteenth- and twentieth-century German and Russian literature, comparative literature

Hartmut Kaiser, Ph.D.: German language and literature, German romanticism, the fairy tale, relations between music and literature

Dorothy Kaufmann-McCall, Ph.D.: French feminism, Sartre and existentialism, European novel
 Constance M. Montross, Ph.D.: Spanish-American literature
 Barbara Geller Nathanson, Ph.D.: ancient Jewish history, history of early Christianity, history of religions, Near Eastern archaeology
 Gale H. Nigrosh, Ph.D.: sociolinguistics, the theory and practice of foreign language teaching, the development of written discourse
 Leo Ortiz-Minique, M.A.: translation, international academic exchanges, study programs in Spanish speaking countries
 Wendy Owanisian-Wagner, M.A.: German and Russian languages
 Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations of literature and science
 Michael K. Spingler, Ph.D.: French theater and film, comparative drama, translation
 Sharon R. Trachte, M.A.: French language and literature, medieval literature

EMERITI

Karl J.R. Arndt, Ph.D.: German
 Raymond E. Barbera, Ph.D.: Romance Languages
 J. Fannin King, M.A.: Romance Languages
 J. Richard Reid, Ph.D.: Romance Languages

UNDERGRADUATE PROGRAM

The Major in Foreign Languages and Literatures

The major in foreign languages and literatures concentrates particularly on the way in which nations may express the consciousness of their culture through literature and other arts. The interdisciplinary and humanistic spirit of the program encourages the student to relate studies in literature to other areas of the humanities and social sciences such as history, philosophy, fine arts, geography, psychology, and sociology in order to arrive at an understanding of the cultural traditions of other nations.

Requirements

- 1) No fewer than eight courses beyond the intermediate level in one or more foreign languages, of which at least one course must be *advanced topics* (designated 199 in French, German, and Spanish), and, unless individual circumstances preclude it, two units of work in a Clark-sponsored or Clark approved study-abroad program.
- 2) A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with a faculty adviser.
- 3) If the major program is concentrated in one language, a reading knowledge of a second language is recommended.
- 4) At least one course in linguistics is recommended.

The department does not require the student to follow a rigid sequence of courses, yet the nature of language study clearly indicates a basic progression which the typical student might follow.

Essentially, departmental offerings for the foreign language major may be organized in the following groups:

- 1) Skill-oriented courses including conversation, composition, translation (101-102, 103-104, 100-level courses)
- 2) Cross-cultural courses and courses focusing on literature and the fine arts including films and theater (100-level courses)

- 3) Courses in literature which concentrate on particular themes, theories, problems, critical approaches (100- and 200-level courses)
- 4) Courses in major figures, literary history, the styles of particular historical periods, and surveys of literature (100- and 200-level courses)

These groupings are not mutually exclusive and, in the case of group two, some courses in film and theater could be considered to share some of the goals of a conversation or composition course but on a more advanced level. Similarly, it would not be possible to address oneself to the study of a style, say that of the Baroque, without pursuing questions of critical approaches and literary theory. However, the grouping is meant to assist the student by suggesting ways of organizing his/her progress within the major, beginning with the mastering of language skills and critical methods, and then proceeding to the application of those skills and methods to particular cultural and literary areas.

HONORS IN FOREIGN LANGUAGES

A student wanting to take honors in a foreign language should choose a topic and adviser and apply to the department chair before the end of his/her junior year. At the student's discretion and with the adviser's approval, a student may register for an honors project, which will carry one unit of credit. The prerequisite for approval of the honors course is completion of at least one course in advanced topics (Language 199).

Once approval of the honors project is made by the chair, the adviser and the student will agree on the deadlines for the project's stages, but the department requires that a preliminary draft of the honors project be completed by the first Monday in April. A final version of the project is due one week before the last day of classes. A second reader, chosen by the student and the adviser, will participate in the final evaluation. In no case will honors be granted to any student who fails to meet both deadlines (although the project still qualifies for course credit and grade).

THE MAJOR IN COMPARATIVE LITERATURE

The major in comparative literature is intended for the student inclined toward studies in the field of foreign literatures, but whose interest lies beyond the scope of any one national literature, period, or genre. The major will afford this student the opportunity of combining related trends, movements, and other literary developments into a program that reflects the broadest possible frame in which to pursue the study of literature.

Requirements

- 1) No fewer than five courses taken beyond the intermediate level in one or more foreign languages. (An intermediate level course in a second foreign language may be used in certain cases toward the fulfillment of the language course requirement.)
- 2) Suggested sequence of core courses in comparative literature:
 - a) Ideally, the student should have taken *Problems in Comparative Literature* (Comparative Literature 110) or a similar introductory comparative literature course by the end of the sophomore year.
 - b) By the end of the junior year, the student should have completed at least two of the following genre courses: *Elements of Drama* (Comparative Literature 230), *Studies in Narrative Form* (Comparative Literature 240), or *English Poetry* (English 13). In certain cases, the sequence of courses might be altered according to the particular direction of studies determined by the student and the adviser.

- c) While a student may wish to devote his/her senior year to a number of tutorials, autonomous projects, and related courses, those students interested in advanced study of literary theory are encouraged to take the *Seminar on Literary Theory and Practice* (Comparative Literature 251).
- 3) A number of related courses varying from five to eight, depending on the student's range of interests, are to be selected by the student in consultation with a faculty adviser.

The Advisory System

Since the department believes that individual courses will assume relevance only in the context of a total program that will have sufficient flexibility to take the student's intellectual biography into account, it emphasizes strongly the close association between student and faculty advisers. The basic role of the adviser is to work closely with the student to ensure that the program developed will enhance and reflect the student's scholarly growth.

Although all members of the department serve as faculty advisers, the following have been designated as advisers in the major areas of concentration offered by the department:

Comparative Literature—Mr. Spingler

French—Mr. Spingler

German—Mr. Schatzberg

Hebrew—Ms. Nathanson

Spanish—Mr. D'Lugo

Students are encouraged to develop a foreign languages program involving two or more languages. To discuss this possibility as well as to plan career goals and options, contact Mr. D'Lugo.

STUDY ABROAD

For summer-, semester-, and year-long programs of study abroad in France, Germany, Mexico, Spain, and Italy, contact the Office of International Programs.

COURSES

- A. Classics**
- B. French**
- C. German**
- D. Hebrew**
- E. Italian**
- F. Russian**
- G. Spanish**

A. CLASSICS

Greek 101-102 INTRODUCTORY GREEK

Refer to course description under Classics.

Mr. Burke

Offered every other year

Greek 103-104 INTERMEDIATE GREEK

Refer to course description under Classics.

Mr. Burke

Offered every other year

Latin 101-102 INTRODUCTORY LATIN

Refer to course description under Classics.

Mr. Burke

Offered every other year

Latin 103-104 INTERMEDIATE LATIN

Refer to course description under Classics.

Mr. Burke

Offered every other year

B. FRENCH**French 101-102 ELEMENTARY FRENCH/ Lecture, Discussion**

Designed for two types of students: those with no background in French and those with some previous exposure to the language who are not yet prepared to enter the intermediate course. Students work on all four language skills (listening, speaking, reading, writing) with the aim of developing an active knowledge of French. Individual work is done in the language laboratory. Indivisible course.

Ms. Nigrosh, Ms. Butzel, Ms. Trachte

Offered every semester

French 103-104 INTERMEDIATE FRENCH/ Lecture, Discussion

A review of French grammar with emphasis on writing and speaking. Reading and discussion of provocative works in journalism, fiction, theater, and poetry to acquaint students with significant personalities and ideas in French life. Also included are group projects on cross-cultural themes in class and individual work in the language laboratory. Prerequisite: French 102 or equivalent background, to be determined by instructor. Divisible course.

Mr. Spingler, Ms. Trachte

Offered every semester

French 120 JEUX DE MOTS: WORD PLAY IN FRENCH/ Lecture, Discussion

For students who have completed work at the intermediate level. This course is designed to increase fluency in French by emphasizing written communication. Writing exercises explore different genres and styles using French models taken from literature, the press, contemporary correspondence, and advertising. The aim is to broaden students' vocabulary in French, strengthen grammatical control, and develop an appreciation for the different social levels of language.

Ms. Nigrosh

Offered every year

French 127 SPEAKING FRENCH: INTERMEDIATE LEVEL/ Lecture, Discussion

The goal is to increase the oral fluency of the student by providing conversational situations in a variety of contexts. Most topics are taken from current events in France and other Francophone countries. Native-speaking assistants help create a setting conducive to extended conversation. Students have the opportunity to use video and tape recording equipment as part of a self-monitoring process in the course.

Staff

Offered every other year

French 131 READINGS IN FRENCH/ Lecture, Discussion

Designed for students at the third-year level who want to enhance their skills in reading, writing, understanding, and speaking French. Modern French texts are chosen for their intrinsic interest and for their linguistic

accessibility. There are class discussions in French. Prerequisite: second semester of French 104 or permission of instructor.

Mr. Spingler

Offered every year

French 132 READINGS IN FRENCH LITERATURE: CONTEMPORARY TOPICS/ Lecture, Discussion

Introduces the student to the study of the ways literature may reflect a nation's cultural and intellectual life. The course emphasizes the literary life in France between the two world wars. Students are given an introductory look at some of the movements that have characterized French culture in the twentieth century, such as surrealism and existentialism. Provides the student with a basis for literary and cross-cultural studies to be pursued at an advanced level in subsequent courses. Readings are selected from the works of Gide, Cocteau, Sartre, Camus, Anouilh, and others. Some films chosen to complement the study of the literature. Conducted in French. Prerequisite: French 120, 127, or higher-level course, or consent of the instructor.

Mr. Spingler

Offered every year

French 135 TRANSLATION WORKSHOP/ Lecture, Discussion

Students work intensively on various texts (advertising, journalism, theater, film scripts, and fiction) exploring theory, techniques, and problems of translation. The emphasis is primarily on translation from French into English (English into French is treated in a separate course) and stresses lexical and syntactic aspects of comparative style. Students become acquainted with the variety of texts an American professional translator might expect to work on, including film subtitling.

Mr. Spingler

Offered every other year

French 137 ADVANCED ORAL FRENCH/ Lecture, Discussion

A phonetic course intended for students beyond the intermediate level who want to perfect their diction in French. A program of oral exercises provides practice in pronunciation and intonation with special attention given to individual needs. Students learn to read and transcribe using a phonetic alphabet. Tape recordings of interviews, literary readings, and songs are used to illustrate different accents and speaking styles.

Ms. Nigrosh

Offered every year

French 138 COMPARATIVE STYLISTICS AND ADVANCED TRANSLATION WORKSHOP/ Lecture, Discussion

Designed to increase the student's skills in written French through a study of comparative stylistics between French and English. The translation component of the course stresses English to French as well as French to English translation using texts from literary, journalistic, commercial, and scientific sources. Using exercises from Vinay and Darbelnet's *Stylistique Comparée du Français et de l'Anglais*, we identify some of the most frequent linguistic and conceptual habits of the two cultures. Once certain parameters have been established, students begin to translate short sample texts.

Ms. Butzel, Ms. Nigrosh

Offered every year

French 150 THE TWENTIETH-CENTURY NOVEL/ Lecture, Discussion

A mid-level course on the structural and historical development of the novel in twentieth-century France. Emphasis is placed on the ways selected works strategically reflect upon their own status and function as literary narrations. Readings include "Combray" from *A la recherche du*

temps perdu (Proust), *L'immoraliste* (Gide), *Voyage au bout de la nuit* (Céline), *La nausée* (Sartre), *L'emploi du temps* (Butor).

Ms. Butzel

Offered every other year

French 157 ASPECTS AND PROBLEMS OF CONTEMPORARY FRANCE/ Lecture, Discussion

A cross-cultural seminar concentrating on the evolution in the twentieth century of traditional French values, myths, and social institutions. Conducted in French. Prerequisite: French 131 or above, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 158 THE FRENCH-SPEAKING WORLD/ Lecture, Discussion

An interdisciplinary analysis of the role of the French language and the culture it represents in various parts of the world, with special emphasis on Quebec, the Antilles, and French-speaking Africa. Students are expected to give an oral report, to be developed into a written research project, on the subject of the course as it relates to their particular discipline or area of interest. Prerequisite: French 131 or above, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 160 FRENCH CULTURE SEEN THROUGH FILM: JEAN RENOIR/ Lecture, Discussion

Includes analysis of the cinematic language and aesthetic of Jean Renoir, with particular attention to the way in which they reflect French traditions, mental structures, and social values. Readings include film scripts, film criticism, and source texts. Attendance at approximately eight to ten films is required. Conducted in French. Prerequisite: French 131 or equivalent.

Mr. Spingler

Offered every other year

French 163 FRENCH CINEMA BETWEEN THE WARS/ Lecture, Discussion

Between 1920-1939, French cinema was the site of such conflicting cultural forces as modernist experimentation and industrial decline, the foreign "imposition" of sound technology and the emergence of a "native" poetic realism, the rise of fascism and the consolidation of the Popular Front. This course concentrates on the relationships between film aesthetics and cultural history of the period and deals especially with questions that formulate and probe the concept of a national cinema tradition. Discussions and student papers consider such issues as the heritage of the 1920s avant-garde, the historical status of poetic and popular realisms, the formation of audiences, and the cultural function of cinema as an institution in France. Film screenings include the work of René Clair, Abel Gance, Jean Vigo, Jacques Feyder, Marcel Carné, Jean Renoir, and Jean Gremillon.

Ms. Butzel

Offered every other year

165 FRENCH DRAMATIC EXPRESSION/ Lecture, Discussion

A workshop course intended to help the student to develop and refine skills in spoken French. Through applied work on a number of theatrical texts including diction, phrasing, rhythm, and gesture the student gains intensive practice in the control of oral expression. Attention necessarily is paid to the texts as dramatic works, but the course is primarily a workshop in advanced spoken French.

Mr. Spingler

Offered every other year

French 167 FRENCH CINEMA: THE NEW WAVE/ Lecture, Discussion
Focuses primarily on the ground-breaking films of Jean-Luc Godard, which profoundly changed the "look" of contemporary cinema including American films. We view films by other members of the New Wave including François Truffaut, Louis Malle, and Claude Chabrol, but the course primarily explores how Godard's radical transformations of film form reflected the crises in cultural and political consciousness in France in the 1960s.

Mr. Spingler

Offered every other year

French 168 DESIRE IN FRENCH FICTION AND FILM/ Lecture, Discussion

From Chrétien de Troyes to the *cinéastes* of the Nouvelle Vague, French writers, critical theorists, and filmmakers have established "desire" as a structural, philosophical, and psychic fundamental to cultural production. This mid-level course is designed to present the concept of desire in manageable terms useful for cross-cultural study. Readings vary, but may include fiction by Chrétien, Madame de Lafayette, Racine, Laclos, Nerval, Gide, Duras, and Cixous. In addition to close reading/viewing of literary and film texts, students are introduced to the critical approaches represented by Denis de Rougemont, René Girard, and Christian Metz. Film screenings include works by Renoir, Bresson, Rohmer, Godard, Duras, and Chantal Ackerman, depending on availability.

Ms. Butzel

Offered every other year

French 170 THE MODERN FRENCH THEATER: EXPERIMENTS OF THE AVANT-GARDE/ Lecture, Discussion

A study of the origins and developments of the avant-garde theater of France with particular emphasis on the staging of the plays. The course focuses on the theater since 1950 especially works by Ionesco, Beckett, Genet, and Arrabal. Also explores the affinities between these playwrights and the Dada and surrealist movements and studies three precursors: Jarry, Ghelderode, and Artaud. Conducted in French.

Mr. Spingler

Offered every other year

French 175 SARTRE AND CAMUS/ Lecture, Discussion

A study of major literary works by Sartre and Camus in the context of each writer's philosophical and political theories. Conducted in French. Prerequisite: French 131 or higher-level course or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 177 ESSAYS OF THE SELF/ Lecture, Discussion

A study of modes of subjectivity in the French tradition through seminal works of self-analysis and autobiography. We explore the relationships between self-expression, self-creation, and philosophy. Texts include Montaigne, *Essais*; Pascal, *Pensées*; Rousseau, *Les Confessions*; Baudelaire, *Mon Coeur Mis à Nu*; Sartre, *Les Mots*; Hélène Cixous, *La Venue à l'Écriture*. Students are asked to keep a journal of their readings. Conducted in French. Prerequisite: one third-year level course, or permission of instructor.

Ms. Kaufmann-McCall

Offered every other year

French 182 WOMEN IN THE MALE LITERARY IMAGINATION/ Lecture, Discussion

Through the historical examination of a tradition central in shaping our notions of women, we try to come to an understanding of the roles of

guage learning and the methods and strategies developed from them. Students draw upon their own experiences as teachers and learners in the foreign language classroom in order to evaluate the strengths of different instructional approaches and improve their own teaching skills. Joint sessions with faculty are scheduled at regular intervals.

Ms. Nigrosh

Offered every year

C. GERMAN

German 8 BASIC GERMAN CONVERSATION I/ Lecture, Discussion

Introduces students to basic German conversational patterns through the use of the highly successful "Guten Tag" film series. Every class session is based on a film which presents conversational material in an authentic cultural context. Recommended for students who wish a short-term exposure to German language study as a transition to the regular program.

Mr. Schatzberg

Offered every year

German 9 BASIC GERMAN CONVERSATION II/ Lecture, Discussion

A continuation of German 8. It introduces students to more advanced conversational patterns through the use of the highly successful "Guten Tag, Wie Geht's" film series. Every class session is based on a film which presents conversational material in an authentic cultural context. Recommended for students with some background in German who wish to stress the spoken language.

Mr. Schatzberg

Offered every year

German 10 READING KNOWLEDGE OF GERMAN/ Lecture, Discussion

Designed to give students in the sciences, social sciences, and humanities a basic knowledge of German with which they can begin to read independently specialized literature in their respective fields. Emphasis is placed, therefore, on essentials for reading comprehension and for translation. Indivisible course, open to juniors, seniors, and graduate students.

Mr. Kaiser, Mr. Schatzberg

Not offered on a regular basis

German 101-102 INTRODUCTORY GERMAN/ Lecture, Discussion

Designed to impart an active command of the German language. It combines the study of grammar with oral practice and readings in literary and expository prose. Indivisible course.

Mr. Schatzberg, Mr. Hughes

Offered every year

German 103-104 INTERMEDIATE GERMAN/ Lecture, Discussion

Begins with a review of German grammar. Reading and discussion of selections adapted from German-language newspapers and magazines. Significant works in prose and drama are studied to acquaint students with outstanding writers and ideas in German literature and culture. Individual work in the language laboratory and weekly written assignments. Prerequisite: German 102, or equivalent background in the language. Both semesters are normally prerequisites for upper-level language and literature courses.

Mr. Kaiser, Mr. Schatzberg

Offered every semester

German 106 SPECIAL TOPICS IN GERMAN

Offered for variable credit.

Staff

Offered every semester

German 128 SPOKEN AND WRITTEN GERMAN/ Lecture, Discussion

This third-year course aims at strengthening good speech habits with regard to German grammar and syntax, at expanding the active vocabulary, and at improving students' ability to express themselves in writing. Literary and journalistic texts serve as a basis for discussion of important issues in contemporary German. Weekly written assignments. Recommended for majors. Prerequisite: German 104 or equivalent.

Mr. Kaiser, Ms. Owanisian

Offered every year

German 130 MODERN GERMAN PROSE/ Lecture, Discussion

Designed to familiarize the student with prose—from West and East Germany—by Kafka, Hesse, Mann, Boll, Grass, Plenzdorf, and Wolf; includes discussions, oral and short written reports in German. Prerequisite: German 104 or equivalent.

Mr. Hughes

Offered every other year

German 134 WORKSHOP IN TRANSLATION/ Lecture, Discussion

Gives students a practical, concrete experience of what it means to "translate" from one language into another. The student sees that the process is not nearly so simple as it may have seemed, but that there is a scale of texts which range from the relatively easy to those that virtually defy rendering into another tongue. In the more difficult cases, it is demonstrated that there is no such thing as a mere rendering of a text into another language, but that the process in, say, poetry, requires transposition of a whole cultural reflex into another. Various kinds of texts will be examined, from the sober style of the scientific article to the emotionally charged language of lyric poetry. Prerequisite: German 104 or equivalent.

Mr. Hughes

Offered every other year

German 142 GERMAN ROMANTICISM/ Lecture, Discussion

An analysis of German romanticism from its beginning in the 1790s to its decline in the 1830s, aesthetic credos, lyric poetry, the drama, major prose works (among them, the fairy tale as an art form) are discussed in their relation to the intellectual history of the period. Authors include the Schlegel brothers, Holderlin, Novalis, Tieck, Wackenroder, Kleist, Brentano, E.T.A. Hoffmann, Eichendorff, and Heine. Prerequisite: German 104 or equivalent.

Mr. Kaiser

Offered every other year

German 145 THE GERMAN NOVELLE/ Lecture, Discussion

A historical and critical study of this uniquely German genre. Particular attention is paid to narrative technique and to the typical features of the novelle distinguishing it from the short story on the one hand and from the novel on the other. Selections range from early romanticism to Thomas Mann. Where applicable, a number of poems by the author under consideration are discussed. Prerequisite: German 104 or equivalent.

Mr. Kaiser

Offered every other year

German 156 THE MODERN GERMAN SHORT STORY/ Lecture, Discussion

After years of isolation and stagnation during the Nazi period and its collapse in 1945, young writers, eagerly trying to establish new values and anxious to link up again with the international literary developments, discovered the English and American short story with its well established tradition and adapted this model to the historical, social, and cultural

conditions in Germany. The short story became the most important literary form during the post-war years and has maintained its significance to the present time. This course involves a careful reading of representative examples by leading modern German writers with special emphasis on thematic variety and structural complexities of the genre. Prerequisite: German 104 or equivalent.

Ms. Owanisian

Offered every other year

German 166 GERMAN DRAMA FROM LESSING TO EXPRESSIONISM/ Lecture, Discussion

Includes reading and discussion of representative plays by the chief German dramatists from the end of the eighteenth to the early twentieth century. Focuses on the sociopolitical aspects of these works, the aims and concepts of the dramatic art, and the changing traditions of playwriting. Authors include Lessing, Goethe, Schiller, Kleist, Grillparzer, Buchner, Hebbel, Hauptmann, Schnitzler, and Kaiser. Prerequisite: German 104 or equivalent.

Mr. Kaiser

Offered every other year

German 206 SPECIAL TOPICS IN GERMAN

Offered for variable credit.

Staff

Offered every semester

GERMAN LITERATURE COURSES CONDUCTED IN ENGLISH

German 112 THE FAIRY TALES OF THE BROTHERS GRIMM/ Lecture, Discussion

Fairy tales are among the oldest and simplest forms of literature. They communicate archetypal patterns of human experience and societal behavior; they reflect human wisdom of all ages derived from all cultures; their moral teaching is universal and universally applicable. The well-known collection of the Brothers Grimm includes 210 fairy tales; about half of them are studied using different approaches to textual analysis in order to acquaint students with a variety of critical methods. No prerequisites.

Mr. Kaiser

Offered every other year

German 116 HESSE, KAFKA, MANN/ Lecture, Discussion

A study of selected works including Hesse's *The Glass Bead Game*, Kafka's *The Trial* and *The Castle*, and Thomas Mann's *The Magic Mountain*. The focus of the course is on developing interpretations of individual works and contrasting the authors' literary techniques and world views.

Mr. Schatzberg

Offered every other year

German 150 THE NEW GERMAN CINEMA/ Lecture, Discussion

A study of selected films of contemporary German film directors, Fassbinder, Herzog, Kluge, Schlöndorff, and Wenders. The goal of the course is to examine the cinematic technique and world view unique to each director as well as German-American cultural cross-currents and relevant social issues as represented in the films under consideration. Students are expected to study the films, read selected critical writings, write short film critiques, and produce a substantial paper dealing with some aspect of New German Cinema. Students may take the course for German language credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 185 CONTEMPORARY GERMANY/ Lecture, Discussion

Offers an intensive view of Germany and a case study of how Americans should look at a foreign culture—comparatively and in contrast with their own. It also offers a cultural saturation approach integrating history, international relations, politics, social life, literature, and the arts. In addition to scheduled classes, special events such as films and guest lecturers are presented in conjunction with the course.

Mr. Schatzberg, Mr. Von Laue

Offered every other year

German 186 GERMAN EXPRESSIONISM IN LITERATURE, FILM, AND PAINTING/ Lecture, Discussion

Offers an interdisciplinary exploration of the modernist movement in German literature, film, and painting in the pre- and post-World War I period, 1910-1924. The following works and authors are studied within the cultural context of the period:

Drama: Wedekind, Kaiser, Toller, Sternheim

Prose: Benn, Döblin, H. Mann, Kafka, Musil

Film: *Caligari*, *Golem*, *Nosferatu*, *The Last Laugh*, *Warning Shadows*, *Metropolis*

Painting: "The Blue Rider", "Die Brücke"

The course is conducted in English, but may be taken for German credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 188 THE CULTURE OF THE WEIMAR REPUBLIC IN LITERATURE, FILM, AND THE ARTS/ Lecture, Discussion

Examines social and political satire and efforts at cultural regeneration between the first world war and the rise of Nazism. The following works are studied within the cultural context of the period:

Prose: Hesse's *The Steppenwolf*, Döblin's *Berlin Alexanderplatz*, Remarque's *All Quiet on the Western Front*

Drama: Brecht's *A Man's a Man*, *St. Joan of the Stockyards*, *The Measures Taken*; Zuckmayer's *The Captain from Koepenick*

Musicals: *Rise and Fall of the City of Mahagonny*, *The Three Penny Opera* (Brecht/Weil)

Film: *M*, *The Blue Angel*, *The Three Penny Opera*, *Berlin Alexanderplatz*, *Kuhle Wampe*

Painting: Georg Gross, Max Beckman, Otto Dix

Architecture: The Bauhaus School

The course is conducted in English, but students may receive German credit by participating in a German language tutorial and reading selected works in German.

Mr. Schatzberg

Offered every other year

German 199 ADVANCED TUTORIAL IN GERMAN LITERATURE/ Lecture, Discussion

The content of this course is determined by the needs and interests of individual students. Ordinarily it is taken by majors in their senior year as a capstone experience. Other advanced students of German language and literature may be invited to participate in the tutorials as space permits.

Staff

Offered every year

German 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING/LEARNING/ Seminar

See Description under French 299.

Staff

Offered every year

D. HEBREW

Hebrew 101-102 ELEMENTARY HEBREW

Modern, conversational Hebrew. Emphasis on speaking, reading, writing, and listening skills. Acquisition of vocabulary and basic grammar through conversation, drills, reading of simple texts, and listening to tapes. Three class meetings a week plus one hour of drill and one hour of individual work in the language laboratory. Indivisible course.

Ms. Nathanson

Offered every year

Hebrew 103 INTERMEDIATE HEBREW

A survey of significant Hebrew texts of the Biblical and post-Biblical period. Enrichment and reinforcement of verbal expressions and grammatical structures. Classes meet three times weekly and are supplemented by individual work in the language laboratory and one hour of drill. Hebrew 102 or the equivalent required.

Ms. Nathanson

Offered every year

Hebrew 104 INTERMEDIATE/ADVANCED HEBREW

A survey of significant Hebrew texts of the pre-modern and modern periods. Literature and newspapers are employed. Enrichment of verbal and written expressions and grammatical structures. Classes meet twice weekly and are supplemented by individual work in the language laboratory and one hour of drill. Hebrew 103 or the equivalent required.

Mr. Waldoks

Offered every year

HEBREW LITERATURE/JUDAIC STUDIES COURSES CONDUCTED IN ENGLISH

Hebrew 119 INTRODUCTION TO THE HEBREW BIBLE/ Lecture, Discussion

A survey of the books of the Hebrew Bible focusing upon the development of basic Jewish religious themes. No Hebrew language background required. Conducted in English.

Mr. Davids

Offered every other year

Hebrew 123 THE RABBINIC LITERARY TRADITION/ Lecture, Discussion

An English language study of the roots and development of non-legal rabbinic narratives, including narrative strands in the Bible; midrashic methodology (with an extended look at sources, schools, techniques); and how medieval Jewish philosophy, mysticism and literature constitute another mode of Midrash. Texts used focus on ethical issues of current concern. No previous background required.

Mr. Davids

Offered every other year

Hebrew 124 THE JEWISH LEGAL TRADITION/ Lecture, Discussion

An English language study of the roots and development of Jewish law, including Biblical legal codes, Midrash, Halacha, Mishnah, Gemara, Responsa, Commentaries, Codes (with an extended look at the Mishnah

Torah of Maimonides and the Shulchan Aruch), and Modern Responsa. No previous background required.

Mr. Davids

Offered every other year

Hebrew 140 THE JEWISH MYSTICAL TRADITION/ Lecture, Discussion

A survey of Jewish mystical thought from the rabbinic period through the rise of Hasidism in the mid-eighteenth century. Special attention to the role of Jewish mysticism as a vehicle for Jewish mythic consciousness. A study of the Kabbalah of Spain, the innovations of the Lurianic school and the literature of the Kabbalah, most notably, the Zohar. Cosmological and theological underpinnings of Hasidism are discussed, together with their impact on contemporary Jewish and non-Jewish thought.

Mr. Waldoks

Offered every other year

Hebrew 160 MODERN ISRAELI LITERATURE/ Lecture, Discussion

The literature of Israel since 1948 ranges from the profoundly religious to the starkly secular. The unique nature of the dreams and yearnings of the contemporary Jewish nation is revealed through a careful study of that literature. We study (in English translation) the works of Agnon, Hazaz, Megged, Amihai, and others. No Hebrew language prerequisite.

Mr. Davids

Offered every other year

Hebrew 185 MODERN JEWISH LITERATURE/ Lecture, Discussion

Through the use of Yiddish and Hebrew literature in translation, this course surveys the creation of modern Jewish literature in the nineteenth and twentieth centuries. The pioneers of Yiddish literature (Mendele Mocher Sefarim, Sholom Aleichem, Peretz) and Hebrew Literature (Ahad HaAm, Bialik, Brenner, Frishman) are discussed.

Mr. Waldoks

Offered every other year

E. ITALIAN

Italian 101-102 ELEMENTARY ITALIAN/ Lecture, Discussion

Designed for students with no previous study of Italian, aimed at acquisition of basic speaking, reading, and writing knowledge of the language. Three hours weekly plus laboratory practice. Indivisible course.

Staff

Offered every year

F. RUSSIAN

Clark students may take additional courses in Russian language and literature at the College of the Holy Cross through the Worcester Consortium for Higher Education.

Russian 101-102 INTRODUCTORY RUSSIAN/ Lecture, Discussion

An introduction to the written and spoken language. Three class periods and three laboratory sessions a week. Indivisible course.

Mr. Hughes

Offered every year

Russian 103-104 INTERMEDIATE RUSSIAN/ Lecture, Discussion

Advanced Russian grammar. Continued emphasis upon reading and conversation. Three class periods and three laboratory sessions a week.

Mr. Hughes

Offered every year

Russian 106 DIRECTED READINGS

Students interested in specific authors and/or topics in Russian literature and civilization may receive instruction and guidance in either English or Russian. Offered for variable credit.

Mr. Hughes

Russian 128 SPOKEN AND WRITTEN RUSSIAN/ Seminar

Aims at strengthening good speech habits with regard to Russian grammar and syntax, at expanding the active vocabulary, and at improving students' ability to express themselves in writing. Literary texts serve as a basis for discussion. Weekly written assignments. Prerequisite: Russian 104 or equivalent.

Mr. Hughes

Offered periodically

Russian 134 WORKSHOP IN TRANSLATION/ Seminar

In this course, students gain practical experience in the translation of Russian into English. A wide variety of texts is considered, ranging from scientific and journalistic styles to narrative prose and poetry. The object is to gain competence in rendering the culturally conditioned verbal signifiers of one language into those of another, fairly remotely removed, language. Prerequisite: Russian 128 or equivalent.

Mr. Hughes

Not offered on a regular basis

RUSSIAN LITERATURE COURSES CONDUCTED IN ENGLISH

Russian 185 THE RUSSIAN NOVEL IN THE NINETEENTH CENTURY/ Lecture, Discussion

An examination of representative great Russian epics of the last century in English translation. They are considered both as works of literary art and as social and historical artifacts. Readings may vary owing to the availability of texts but will usually include Tolstoy, Dostoevsky, Gogol, Goncharov, Turgenev, and Chekhov. Some reading in Russian intellectual history and in the "radical democratic" critics.

Mr. Hughes

Offered every other year

Russian 187 THE RUSSIAN NOVEL IN THE TWENTIETH CENTURY/ Lecture, Discussion

A consideration of representative Russian novels of the twentieth century—in English translation—in their historical and social context. Readings may vary depending on the availability of texts but will probably include such pro-Soviet works of "socialist realism" as Gorky's *Mother* and Sholokhov's *Quiet Flows the Don*, experimental fiction like Zamyatin's *We*, and counterrevolutionary works such as Pasternak's *Dr. Zhivago*, Bulgakov's *Master and Margarita*, and Solzhenitsyn's *Cancer Ward*. Some reading in Russian intellectual history and in the formalist and Marxist critics.

Mr. Hughes

Offered every other year

G. SPANISH

Spanish 101-102 ELEMENTARY SPANISH/ Lecture, Discussion

Designed for students with no previous knowledge of Spanish. The aim is acquisition of a basic speaking, reading, and writing knowledge of idiomatic Spanish as preparation for subsequent courses conducted in the language. There are three hours of class contact per week plus individual work in the language laboratory. Indivisible course.

Mr. D'Lugo, Mr. Ferguson, Staff

Offered every semester

Spanish 102 ELEMENTARY SPANISH-INTENSIVE/ Lecture, Discussion
An accelerated elementary course for students who have started the study of Spanish but who have not qualified for *Intermediate Spanish*. Three hours weekly plus individual work in the language laboratory.
Mr. D'Lugo Offered every semester

Spanish 103-104 INTERMEDIATE SPANISH/ Lecture, Discussion
Offers consolidation of basic skills in the language for students who previously have completed Spanish 102 or its equivalent. First semester stresses development of oral facility in Spanish through a variety of exercises including taped interviews with native speakers, improvisational acting in brief scenes from plays, and discussions based upon readings related to topics of Hispanic culture and society. Grammar review is based upon the specific needs of the group. Prerequisite: Spanish 102 or equivalent skill in the language. Spring semester includes more extensive readings on themes of Hispanic culture as the basis for class discussion and essay assignments. The focus of the spring semester is those activities in speaking, reading, and writing that provide the student with sufficient mastery of basic skills in Spanish to allow for reasonable adjustment to advanced course work in Hispanic studies.
Mr. Ortiz, Staff Offered every semester

Spanish 127 PRACTICE IN ORAL AND WRITTEN SPANISH/ Lecture, Discussion
An advanced intermediate course to help students develop fluency and accuracy in the spoken and written language. Classes stress composition and pronunciation as well as conversation practice. May be taken after the first semester of Spanish 103 with permission of the instructor.
Mr. Ferguson, Mr. Ortiz, Staff Offered every other year

Spanish 131 READINGS IN HISPANIC LITERATURE/ Lecture, Discussion
An introduction to the artistic and cultural variety of modern Spanish and Spanish-American narrative and dramatic literature. The course combines representative authors of both Spain and Spanish America, emphasizing the creative vision of particular writers and the cultural and political context within which their works are situated. Each semester the readings are organized around a particular theme that integrates the works of both peninsular and Spanish American works. Themes normally covered include: the idea of cultural continuity and modernity; notions of norm and deviance in the Hispanic community; the concept of revolution as a collective and individual ideal. Since course content is variable students may elect to take this course twice. Prerequisite: Spanish 104 or equivalent skill in the language.
Mr. D'Lugo, Mr. Ferguson, Staff Offered every semester

Spanish 132 INTRODUCTION TO SPANISH LITERATURE OF THE TWENTIETH CENTURY/ Lecture, Discussion
Offers reading and discussion of selected works from the Generation of 1898 to the contemporary period (Unamuno, Pío Baroja, García Lorca, Cela, Buero Vallejo, Sastre, Goytisolo). Emphasis is on structures of conflict within dramatic and narrative works, including selected recent Spanish films, individual vs. the group as seen particularly in the depiction of the Spanish Civil War in contemporary literature, the artist's conception of cultural continuity, the themes of modernity and change as reflected in the works of more recent writers. Conducted in Spanish.
Mr. D'Lugo Offered every year

Spanish 133 HISPANIC THEMES/ Lecture, Discussion

A third-year course of readings and discussions intended to introduce the student to the diversity of Hispanic culture through a close consideration and analysis of a limited number of problems as reflected in selected readings from literature, history, and cultural anthropology as well as current periodicals in Spanish. The course focuses on one or two of the following national cultures: Chile, Cuba, Mexico, Spain, Argentina. Topics normally covered include: parallel development of Anglo-American and Hispanic cultural institutions, changing identity of the family and the individual in twentieth-century society, the emerging identities of women in these societies, and a comparison with the traditional Hispanic definition of women's role. Readings and discussions will be in Spanish.

Mr. Ferguson

Offered every other year

Spanish 135 HISPANIC FILM AND SOCIETY/ Lecture, Discussion

An examination of Spanish-language cinema as cultural reflection and artistic form within the Hispanic world. The course involves consideration of a number of major filmmakers from Spain, Mexico and Cuba, with an emphasis on the ways in which these directors develop critiques of Hispanic society and cultural institutions. Readings normally include film scripts, critical readings, and source narratives. Class work consists of viewing, discussion, and close analysis of ten major films. Theme for fall, 1984: "New Cinema in Spain;" Theme for Fall, 1985: "Films of Luis Buñuel." Prerequisite: Spanish 131 or equivalent skill in the language.

Mr. D'Lugo

Offered every year

Spanish 136 WOMEN IN HISPANIC LITERATURE/ Lecture, Discussion

Analyzes the role of women in Hispanic culture from its beginnings to the present. Emphasis is on the link between the patriarchal social order and violence against women. Readings include major works from both the Spanish and Latin American tradition. Prerequisite: Spanish 131 or equivalent skill in the language.

Staff

Offered every other year

Spanish 137 ADVANCED ORAL AND WRITTEN SPANISH/ Lecture, Discussion

A third-year level course, this is a rapid review of grammar and style, with exercises in composition, pronunciation, and intonation. It is intended to allow the student with one or more years of advanced college work in Spanish (or equivalent) the opportunity for refinement and mastery of both written and spoken Spanish. Emphasis is placed upon control and accuracy of expression in writing through regular compositions and translation exercises as well as work in phonetics and diction. Prerequisite: Spanish 131 and one course above that level.

Staff

Offered every other year

Spanish 138 HISPANIC LITERATURE OF POLITICAL COMMITMENT/ Lecture, Discussion

A study of the creative writer's position vis-a-vis the social and political movements of the twentieth century. Writers discussed include Neruda, Vallejo, Hernández, and Cardenal; Cuban writers and poets in their sometimes ambiguous relationship to the Revolution; the writers of the Chicano movement and the dream of Aztlán; and Puerto Rican authors both on the mainland and on their native island. The course is conducted in English; a

reading knowledge of Spanish is required. Prerequisite: Spanish 131 or permission of the instructor.

Mr. Ferguson

Offered every year

Spanish 140 SPANISH DRAMATIC EXPRESSION/PLAY PRODUCTION/ Lecture, Discussion

Intended to provide the student who has completed Spanish 104 or equivalent with an opportunity to develop and refine habits of gesticulation, rhythm, and intonation of contemporary spoken Spanish. Includes close work on two contemporary dramatic works, which will give the student practical experience in the skills of interpersonal encounters in which control of oral expression is required. Although some consideration is given to the texts as dramatic works, the course is principally a workshop in advanced oral Spanish. Prerequisites: Spanish 104 or equivalent skill in the language.

Mr. D'Lugo, Mr. Ortiz

Offered every year

Spanish 141 SPANISH TRANSLATION WORKSHOP/ Lecture, Discussion

A workshop and not a descriptive course in the techniques of translation. The purpose is to enable students to translate printed data (commercial, technical, scientific, comic strips) from Spanish into English and vice-versa. The course is based on a linguistic approach and consists of formal sessions in which this basic theory and its diverse techniques will be taught—plus the workshops. The workshop sessions, in which students translate printed material, are the testing ground for the theory expounded during the “magisterial” lessons. Other exercises cover: morphemes, lexicon and cognates, syntagmatic sequences, clauses, and sentences. Paragraph and “textual” translation is dealt with separately. Prerequisites: language majors—four college semesters of Spanish or equivalent; linguistics majors—a course in at least one of the following: general linguistics, theoretical linguistics, transformational grammar, semantics. Spanish 131 or permission of instructor.

Mr. Ortiz

Offered every year

Spanish 143 SPANISH ESSAY AND THOUGHT/ Lecture, Discussion

Readings and discussions of selected essays from influential writers of Spain and Spanish America as these express the cultural, social, political, and ethnic values and concerns of the Spanish-speaking people. Readings reflect both the traditional notions of Hispanic society and contemporary views as posed in recent magazines, periodicals, and newspapers. Prerequisite: Spanish 131 or permission of instructor.

Mr. Ortiz

Offered every other year

Spanish 145 SPANISH-AMERICAN SHORT STORY/ Lecture, Discussion

An introduction to the tradition and development of shorter narratives in Spanish America. Class discussion and readings emphasize the richness of artistic innovation from the earliest “primitive” narrations of colonial chroniclers through the progressive refinements of theme, local color, style, and narrative technique characteristic of this oldest and most favored of Spanish-American literary genres. Particular attention is paid to those authors and stories that represent the landmarks in the shorter narrative

tradition: writings of Rubén Darío, Horacio Quiroga, Borges, Fuentes, Cortázar, Rulfo. Conducted in Spanish.

Mr. Ferguson

Offered every other year

Spanish 147 ADVANCED GRAMMAR REVIEW/ Lecture, Discussion

Designed for those students who have attained an advanced level of proficiency in Spanish but lack sufficient normative knowledge of the language. It is not a theoretical course in grammar but rather a practical one in that it shows the students how the grammatical structures of Spanish work. It is also contrastive in nature, showing the students the main grammatical differences that exist between Spanish and English, thereby allowing them to express themselves correctly in Spanish. These contrastive aspects are taught in a progressive order going from lexical differences (cognates) to syntactical ones (e.g. the use of the impersonal active in Spanish as opposed to the impersonal passive in English). Instructional materials include grammar (*construcción*) and writing (*redacción*) exercises, as well as readings taken from current journals, newspapers and magazines. Prerequisites: Spanish 131 or equivalent or permission of the instructor.

Mr. Ortiz-Minique

Offered every other year

Spanish 199 ADVANCED TOPICS TUTORIAL/ Seminar

Close readings and discussion of representative works by major Spanish writers of the premodern period. The content of this course is determined by the needs and interests of individual students. Ordinarily it is taken by majors in their senior year as a capstone experience. Proposed topics for 1984-85 include: Galdós and the realist tradition in the Spanish novel; The *Comedia* and Golden Age literature. Proposed topics for 1985-86 include: *Don Quijote*, the Spanish and Spanish-American picaresque tradition.

Mr. D'Lugo, Mr. Ferguson, Staff

Offered every semester

Spanish 206 SPECIAL TOPICS IN SPANISH/ Seminar Variable credit.

Staff

Offered every semester

Spanish 207 FIELD WORK IN THE HISPANIC COMMUNITY/ Seminar

Students have supervised contact and work in one of a variety of community agencies and projects servicing the Hispanic community in Worcester (bilingual school programs, Casa de la Comunidad, Worcester Legal Services, etc.). Students participating in particular field projects are assigned to a member of the Department and/or persons in related academic departments. Under the direction of the adviser, students are placed in a particular community project. Through consultation with the campus adviser and a designated supervisor from the cooperating agency, the student works with members of the Hispanic community while developing a written project related to the particulars of language, culture, and related problems of the bilingual community in Worcester. Prerequisites: proficiency in Spanish as determined by the Department; successful completion of course work in the field or fields related to the specific project area; permission of instructor. Offered for variable credit.

Ms. Nigrosh, Mr. D'Lugo

Offered every semester

Spanish 299 FRENCH, GERMAN, SPANISH: SEMINAR IN FOREIGN LANGUAGE TEACHING/LEARNING/ Seminar

See Description under French 299

Staff

Offered every year

INTERNSHIPS IN MEXICO

Available through our ITESO program: Communications, Community Development, Education. **FRENCH** See Department of Foreign Languages and Literatures.

French

See Department of Foreign Languages and Literatures.

Geography

GRADUATE SCHOOL OF GEOGRAPHY FACULTY

B.L. Turner II, Ph.D., *director*: cultural ecology, agriculture

Leonard Berry, Ph.D.: applied geomorphology, environmental development

Martyn J. Bowden, Ph.D.: cultural humanistic and historical urban-social

Ronald Eastman, Ph.D.: cartography, geographic information systems

Jacque L. Emel, Ph.D.: water resources, resource management

Susan Hanson, Ph.D.: urban-social, transportation

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

Gerald J. Karaska, Ph.D.: urban/economic, development

Roger Kasperson, Ph.D.: political, hazards

Robert W. Kates, Ph.D.: theory of human environment, hazards

Duane S. Knos, Ph.D.: urban, teaching/learning processes

William A. Koelsch, Ph.D.: history of geography, environmental history

Laurence A. Lewis, Ph.D.: geomorphology, food and soil in the tropics

Sharon E. Nicholson, Ph.D.: climatology, meteorology

Richard Peet, Ph.D.: political economy, Marxist geography

Geraldine J. Pratt, Ph.D.: urban/social, humanistic studies

Harry E. Schwarz, B.C.E.: water resources and use

Harry J. Steward, Ph.D.: cartography, remote sensing

ADJUNCT FACULTY

Dennis W. Ducsik, Ph.D.: energy technology, coastal zone management

Perry O. Hanson III, Ph.D.: quantitative methods, geographic information Systems

David C. Major, Ph.D.: water resource economics

AFFILIATE FACULTY

Anne Buttimer, Ph.D.

Saul B. Cohen, Ph.D.

Daniel Dworkin, Ph.D.

Kirsten Johnson, Ph.D.

STAFF

Timothy Fast, M.A.: cartographer, cartography laboratory manager

Katherine A. Parella: administrative assistant

Charlotte A. Slocum, M.S.: map and geography librarian

EMERITI

Raymond E. Murphy, Ph.D.

The Graduate School of Geography was organized in 1921, making Clark the second university in the United States to establish an independent graduate program in geography. At present, advanced training is provided, leading to the Ph.D. degree. In addition, the school offers an undergraduate major and a seven-year program (B.A./Ph.D. degree). Clark is a major center for geographical training and research in the United States. The program emphasizes individual attention through student-teacher dialogue.

Publications

A professional journal, *Economic Geography*, is edited by a faculty member. Started at Clark University in 1925, it is the only journal published in English that specializes in economic geography. The journal has a worldwide distribution with a total circulation of about 5,000.

The graduate students maintain the Clark University Geographical Society (CUGS). Their publication, *Monadnock*, keeps School of Geography alumni in touch with each other and with news and scholarly activities of the school.

The *Annals of the Association of American Geographers* is the principal outlet for major scholarly articles in geography. Published quarterly, the journal prints papers on a wide variety of topics representative of contemporary geographic research. A Clark faculty member is now editor of the *Annals*.

In addition, some students and faculty members edit and produce another publication, *Antipode*.

The professional work of some members of the department is published in the CENTED (Center for Technology, Environment and Development) publication series at Clark University.

GEOGRAPHY UNDERGRADUATE PROGRAM

The Undergraduate Geography Program covers a three-year period (sophomore-senior), during which 50-80 percent of the student's course work is accounted for within the program. A minimum set of geography requirements is built into the major, and course work in cognate fields is selected in consultation with the student's adviser in light of individual needs and capacities.

Emphasis in the undergraduate major in geography is on broad training in the field. Within this training, some specialization is facilitated by the organization of courses in *streams* and students are encouraged to take a series of courses in one or two of these streams. Geography majors are encouraged to gain skills in quantitative methods, computer programming, mapping, and research methods.

There is a departmental advisory system headed by a central, undergraduate adviser who advises all incoming majors. As the student advances through the program, he or she may select another adviser whose interests best match his or her own. A geography major's courses for each semester must be approved by the adviser.

Courses are sequential to allow progressively greater use of skills from 00-level to 100-level to 200-level courses. The recognized areas of concentrated interest (streams) at the undergraduate level are:

- a) cultural/humanistic
- b) environmental affairs/management
- c) physical geography of human systems
- d) regional/international development/political economy
- e) urban/social/planning
- f) cartography (Because cartography has fewer faculty than the other groups, there are limited offerings in this area.)

The Geography Student Organization (GSO) functions as a sound and professional outlet for undergraduates. Students are encouraged to participate in its career seminars, trips, and other activities.

REQUIREMENTS FOR GEOGRAPHY MAJORS

To graduate as a geography major, the student must complete the following courses:

1. *Within the Graduate School of Geography*

(a) *Geography 011, Survey of Geography*

(b) Two courses selected from among the following:

Geography 014, Introduction to Physical Geography

Geography 015, Introduction to Economic Geography

Geography 017, Introduction to Cultural Geography

Geography 018, Introduction to Urban Geography

Geography 019, Introduction to Environmental Management

(c) Two skills courses selected from among the following:

Geography 110, Computer and Quantitative Methods: Introduction

Geography 247, Computer and Quantitative Methods: Intermediate.

Geography 181, Introduction to Cartography or an advanced cartography or remote sensing course.

Geography 137, Time and Space in Old and New England—for students in the cultural-humanistic stream.

Geography 141, Research Methods in Geography

In addition, the department accepts a second-year, second-semester language course as a skill. Other courses equivalent to those listed above may be accepted by the student's adviser.

(d) A 100-level course taken as a "writing course"

(e) A 200-level geography senior seminar

(f) A 200-level course in the same stream as the senior seminar

(g) At least three additional courses in geography, taken at 200-level

2. *In Disciplines Related to Geography*

Four elective courses in related disciplines, selected in consultation with adviser, must be taken.

DUAL MAJOR: REQUIREMENTS

For students majoring in geography and another discipline, the requirements are: *Survey of Geography* (011), one 00-level introductory course, two skills courses, a 100-level writing course, a 200-level *senior seminar*, a 200-level course in the same stream as the senior seminar.

HONORS PROGRAM IN GEOGRAPHY

Students with an outstanding academic record are eligible to participate in the Geography Honors Program. To graduate with honors in geography the student must successfully complete either a one- or two-credit independent honors project conducted under the supervision of a faculty member.

The Geography Honors Program is open to juniors who, by the end of the first semester of the junior year, have a minimum grade point average of 3.25 overall and 3.5 in the geography major (geography courses and cognate courses) and who can demonstrate that they have the appropriate research background required to undertake independent geographic research.

The student who wants to carry out a two-semester honors thesis will register for geography honors the spring semester of the junior year and the fall semester of the senior year. A thesis proposal must be approved by the supervising faculty member by November 1 in the student's junior year. Students wishing to pursue a one-semester honors thesis can do so either in the spring of the junior year or in the fall semester of the senior year; the deadline for approval of the thesis proposal is November 1 of the junior year if, the thesis is to be completed in the junior year, and April 1 of the junior year if, the thesis is to be conducted in the fall semester of the senior year. Students interested in the Geography Honors Program should

get additional details from the undergraduate adviser in the Graduate School of Geography.

SEVEN-YEAR B.A./PH.D. PROGRAM

A formal seven-year program for Clark undergraduate students is offered, leading to the Ph.D. degree in geography. At the undergraduate level, applicants must major in geography or a dual or interdisciplinary field, and make application at the end of the first semester of the junior year. The B.A./Ph.D. program may include the sixth year off campus, in residence at another university or agency. Admissions are limited to a very small number of highly qualified students and in subfields of concentration that are approximate to Clark's range of offerings. For specific information, contact the director of the School of Geography. Applications to these programs should be submitted to the Geography Office no later than February 15.

THE GRADUATE SCHOOL OF GEOGRAPHY PH.D. PROGRAM

Admissions:

Applicants with or without prior training in geography are welcome. Depending on their concentrations, they may be required to improve their knowledge of elements of geography, cartography, or descriptive statistics. Courses taken to remedy any deficiencies will not count as part of the regular program. The Graduate Record Examination scores (verbal and quantitative) are required of all students with the exception of those from foreign countries.

Graduate Program:

The graduate program of study in geography at Clark focuses on the Ph.D. degree, and only those students seeking training for that degree are admitted into the program.

Degree Objectives:

The graduate program in geography at Clark recognizes a basic difference in emphasis between undergraduate and graduate education. Undergraduate education stresses the mastery of content and skills associated with sets of disciplines that presumably have relevance to future careers and lifestyles. Graduate education, on the other hand, eases entry into a community of professional scholars-learners who learn outside the formal structure of the classroom. Such scholars are skilled in constructing learning experiences for themselves and in structuring their learning in a form that suggests avenues in the continuing development of their fields of study. The program of study aims at providing experiences that nurture the development of the knowledge and skills essential to that mode of learning.

As prospective members of this geography community, graduate students work toward the following objectives:

- 1) development of extensive knowledge in the content of geography and competence in the use of research skills
- 2) development of a sense of problem (for research problems are at the core of an experiential learning process)
- 3) development of divergent thinking skills from which creative and original ideas evolve
- 4) development of a sense of the tentativeness of knowledge and a patience with ambiguity

- 5) development of a tough-minded learning discipline
- 6) development of a sense of self-confidence and competence
- 7) development of a sense of the nature of the community of geographers.

The program is designed to enable students to focus their learning experience with these philosophical guidelines in mind.

Program Structure:

The graduate curriculum is organized to give a broad view of the field of geography and its teaching, as well as a specialized approach to selected subfields. The subfields, organized in accordance with the interests and competencies of the staff, include: cultural/humanistic, environmental affairs/management, physical geography of human systems, regional/international development/political economy, urban/social/planning. In addition, ongoing projects conducted by research groups in the School of Geography, the International Development Program, and the Center for Technology, Environment and Development (CENTED), should be considered an integral part of the graduate curriculum; students may choose to structure their programs around such collaborative research endeavors. (See appropriate sections on CENTED and International Development.)

Students or faculty who do not wish to operate within the framework of a formal subfield may create personalized programs or fields of concentration outside of the formal subfields; these options are limited only by the general nature of the offerings and the interests and competencies of the staff.

The first year of graduate study is planned to broaden the student's knowledge of the field of geography and help define student interests in the context of the Clark program. First-year graduate students must take the graduate core course (305/306) during the first year of study. The remainder of the student's course work is selected in consultation with the graduate adviser. In addition, graduate students are encouraged to attend departmental colloquia, which cover a variety of topics and involve a number of guests and staff. Towards the end of the first year, a formal review of the student's progress and discussion of future plans is conducted by a three-member, First-Year Advisory Committee. The student must declare a formal adviser during the meeting of the committee.

The second year of graduate study should emphasize learning through in-depth work in the student's field of interest, through a focus on problem formation and through research experience. Usually, this year involves working closely with a single faculty member or a group of faculty and students. Emphasis should also be placed on the development of conceptual depth and skills, especially those applicable to the dissertation experience, and preparation for doctoral exams.

By the third year of study, students should be well on their way to completing most of the requirements of the graduate program. The aim is to be advanced to Ph.D. candidacy in order to proceed with doctoral research and writing. Doctoral examinations must be taken by the end of the third year of study. These exams focus on the breadth of knowledge in substantive sub-fields of geography and on a knowledge of methodological and philosophical concerns relevant to the student's interests. Normally, the specialty skills requirement should be completed before the doctoral exam is taken. A specialty skill includes some technique, method, or ability that is essential to the student's research experience (data collection or interpretation).

After the completion of the doctoral examinations, students submit a

proposal for doctoral research that must be approved by the doctoral proposal committee. On completion of all requirements and approval of a draft of the Ph.D. dissertation, the student presents and defends the dissertation to the committee and other members of the school.

Residence and Credit Requirements

A three-year residence and 16 course credits beyond the B.A. degree are required for the Ph.D. program. Students entering with an M.A. in a field other than geography will be expected to complete essentially the three-year residence program and at least 8 course credits as determined by the School. Students entering with an M.A. in geography from another institution must complete two and one-half years of residency and 8 course credits.

Teaching and Research Prerequisite:

Some teaching and research experience at Clark is prerequisite to the Ph.D. degree. Every effort is made to organize various forms of internships to provide on- and off-campus training activities, at the teaching and research levels.

DISTINCTIVE FEATURES AND SPECIALIZATION

The Graduate School of Geography is housed in modern quarters in the University's Academic Center. In the Geography Building, the Geography Workroom provides assigned study space for graduate students and houses the John K. Wright Reading Room. The reading room contains the personal library of Dr. Wright and regularly updated publications in the field of geography and subscriptions to geographic journals. Readings for geography coursework are held on reserve here. The Libbey Library serves as a lounge for graduate students.

The *Guy H. Burnham Map Library* is a multifaceted, special library staffed by a professional librarian. The collection consists of over 130,000 maps, charts, atlases, aerial photographs, and globes, and is a depository for maps and charts from federal agencies. Many supportive materials are on hand; others can be obtained through interlibrary cooperation. The library is designed to meet the geographic needs of the Clark community and the central Massachusetts area.

The *Clark University Cartographic Service and Cartography Classrooms* are located in the lower level of the Academic Center. This area provides students with specialized workspace and a variety of up-to-date cartographic equipment, including a newly enlarged graphic arts darkroom, a stereo-facet plotter, and a complete microcomputer/digitizer system.

Cross-Disciplinary Training (as evidenced by the joint appointments held by geography faculty with other departments); the clustering of faculty research and teaching interests in several areas related to environmental affairs/management, cultural/humanistic, physical geography of human systems, regional/international development/ political economy, urban/ social/planning, and cartography currently characterize the school.

The School of Geography fosters *student and faculty exchange* with other institutions, including institutions outside the field of geography and with geography departments elsewhere. Clark has long encouraged ties with foreign students and faculty. Focus in recent years also has included links with development institutions in the United States and elsewhere by training prospective faculty and by facilitating programs.

COURSES (listed by stream)

NONSTREAM

011 SURVEY OF GEOGRAPHY/ Lecture, Discussion

A survey of major concepts in modern geography. Emphasis is placed on the various approaches to geographic research currently conducted in the Graduate School of Geography. Physical (climatology, soils, biogeography, and landform studies), cultural, historical, economic, urban, and social themes are developed. Designed primarily for freshmen and sophomores. A required course for geography majors.

Mr. Johnson, Mr. Bowden, Mr. Turner

Offered every year

110 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTRODUCTION/ Lecture, Laboratory

Introductory computing and quantitative methods course for which graduate students may receive credit. Focuses on how geographers go about problem solving using computers and quantitative methods. The course is designed around a series of weekly exercises and laboratory assignments.

Staff

Offered every year

141 RESEARCH METHODS IN GEOGRAPHY/ Lecture, Discussion

Focuses upon the ways in which social science research is conducted and emphasizes primarily applied research in a problem-solving context. Involves the students in the variety of problems, methodological strategies, and analytical techniques characteristic of current geographical research. Topics include defining a research problem, measurement, sampling, questionnaire design, and modeling.

Ms. Hanson, Ms. Pratt

Offered every year

146 POLITICAL GEOGRAPHY/ Lecture, Discussion

Analysis of the interplay between geography and politics, treating such topics as the territorial organization of political systems, decentralization, spatial conflict, electoral geography, delivery of public services, environmental politics.

Mr. Kasperson

Offered every year

174 THEMES IN CLASSICAL GEOGRAPHIC THOUGHT/ Discussion

Ecology, ecumene, environment, exploration: these four themes are the intellectual legacy to modern geography of the ancient Greeks and other Mediterranean peoples. Such geographically related topics as the voyage of Odysseus, the Atlantis myth, the concept of sacred space, the measurement of the earth, the relations of nature and culture, the design of the environment, the idea of the habitable world, the relations of climate and health, and the exploration of the "barbarian" world are examined both in the accounts of ancient Greek and Roman writers (in translation) and in later scholarly elaborations. Open to all those interested in the continuing significance of the thought of the ancient Mediterranean world.

Mr. Koelsch

Offered every other year

206 AUTOBIOGRAPHY WORKSHOP/ Discussion

Offers a consideration of how students have learned in their own lives as a prerequisite to helping others to learn. Seeks to engender an appreciation

of both uniqueness and generalization in the process of learning and integrating personal experience into a structure of knowledge.

Mr. Knos

Offered every year

209 SIMULATION AS A LEARNING DEVICE/ Discussion

Designed to provide experience in the development of simulations to illustrate a variety of geographic concepts. Concepts are defined, illustrations in the real world are formulated, simulations of these situations are developed.

Mr. Knos

Offered every year

247 COMPUTER AND QUANTITATIVE METHODS IN GEOGRAPHY: INTERMEDIATE/ Lecture, Laboratory

Focuses on the following topics: multiple correlation and regression (including the analysis of residuals); analysis of covariance, dummy variables, and other applications of the linear model; multivariate extensions of analysis of variance. In the labs associated with this course, students work with the BMDP and SPSS software packages and are introduced to computer programming. Prerequisite: Geography 110.

Staff

Offered every year

297 GEOGRAPHIC INFORMATION SYSTEMS (GIS)/ Seminar, Laboratory

A skills-oriented course designed to introduce students to spatial data manipulation, analysis, and display. Topics include an examination of existing GIS, spatial data base management, spatial algorithms, and the role of GIS in planning and development and in urban and regional analysis. Students are required to participate in group projects that are designed to lead to the implementation of a GIS. Prerequisite: Geography 110, Geography 298, Computer Science 101, or permission.

Staff

Offered every year

305 GRADUATE CORE COURSE/ Seminar

This course (a requirement for first-year graduate students) is an introduction to the graduate program, the modern history of the discipline, and several key issues involving professional geography. The histories of the Graduate School of Geography and of twentieth-century geographic thought, emphasizing developments during the past 20 years, are reviewed. Major issues of methods and analysis also are reviewed. The course culminates in paper presentations dealing with the specialty fields identified by the students.

Staff

Offered every year

306 GRADUATE CORE COURSE/ Seminar

This course (a requirement for first-year graduate students) investigates the structure, language, and method of research and explanation utilized in geography. Geography is reviewed as science/social science and as humanity. Positivism, humanism, dialectical materialism, phenomenology, and other structures are explored as used in the discipline. Methodologies, research, and writing skills are explored. Proposal writing is emphasized, culminating in a written proposal of study and presentation of it by the students.

Staff

Offered every year

320 SEMINAR IN SYSTEMS AND SOCIAL SCIENCE/ Seminar

The structure of explanations in social science is examined as the rudiments of more elaborate systems, teleological systems, and functional systems explanations. The structure of each system explanation is critiqued. Attempts to provide such explanatory forms in geography and related disciplines are examined.

Mr. Turner

Offered every other year

366 SEMINAR IN COLLEGE CURRICULUM DESIGN/ Seminar

Students study the development of curriculum with supporting materials oriented toward college undergraduates. Learning in a problem context is stressed.

Mr. Knos

Not offered on a regular basis

368 COLLOQUIUM: THE DEVELOPMENT OF GEOGRAPHIC THOUGHT/ Discussion

After a brief survey of Western geography from Classical times, the colloquium examines the principal paradigms, themes, and debates within the discipline in the twentieth century and the professional structure of the field as it exists in research, education, and applied contexts. Designed primarily for graduate students in geography who want a general overview of their intended profession. Well-qualified undergraduates may be admitted by permission.

Mr. Koelsch

Offered every year

CULTURAL/HUMANISTIC**017 INTRODUCTION TO CULTURAL GEOGRAPHY/ Lecture**

An ecological and historical approach to the study of cultures and cultural change in a spatial context. A series of broad themes and problems are illustrated by case studies set mainly in North America. Among major themes considered are: adaptation to the "natural" environment, culture in prehistory, migration and the creation of cultural areas (particularly New Mexico), the world views of primitive, traditional, and industrial culture, cultural landscape and the cultural geography of the United States. One discussion section each week in addition to lectures.

Mr. Bowden, Mr. Johnson

Offered every year

108 WORLD POPULATION/ Lecture

Is the population of the world growing too fast? Will the world encounter an over-shoot leading to doomsday? To address these questions requires an understanding of the nature of population growth and socio-cultural responses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed.

Mr. Turner, Mr. Johnson

Offered every other year

117 CULTURE LANDSCAPE/ Lecture

Examines the processes and values that shape the human environment. Fundamental premise is that every culture leaves a record of its presence in its material landscape and that this landscape record can be understood and "read" by the informed observer. Because landscape is a product of culture as well as of nature, it can best be understood comparatively using

both an insider's (native's) and outsider's perspective. Insights are gained by comparing familiar landscapes with those produced by other cultures. For this reason, the course studies selected Middle Eastern, Indian, Chinese and European landscapes in addition to the regional landscapes of North America. Artistic, literary, historical, and ecological perspectives are brought to bear on the interpretation of ordinary and elite landscapes of fact and symbol.

Mr. Johnson

Offered every other year

137 TIME AND SPACE IN OLD AND NEW ENGLAND/ Lecture

Uses cases from old and New England to demonstrate the skills, methods, and sources of cultural, historical, and humanistic geography in the towns and fields of New England and in texts of both Englands. Dating techniques; prehistoric chronology; estimating past populations; toponymy, linguistic and lexical evidence; archaeology and ground itself; archival and literary evidence; aerial photography; vernacular and high style architecture; analysis of art and literary texts. Skills course for geography majors in *cultural stream*.

Mr. Bowden, Staff

Offered every other year (summer)

139 COUNTRY AND CULTURE/ Lecture

The landscape can be read! Be it a vast tropical rainforest with an occasional clearing or an intensively cultivated river valley in New England, the rural landscape is the product of interaction between place (environment) and people (culture). This course traces the evolution of rural landscapes through time from early hunter/gatherers to modern suburban encroachment on rural areas. Emphasis is placed on ecological principles that help explain the techno-cultural modification of rural places.

Mr. Johnson, Mr. Turner

Offered every year

140 CITIES AND CULTURE/ Lecture

Studies of the ideal, symbolic, and actual forms of cities in the major civilizations and of the characteristic patterns of places within each. Contrast is made between the oriental and occidental, the cosmomagical and symmetrical, the traditional and modern, the preindustrial and industrial, the precapitalist and capitalist, the cities of orthogenesis and heterogenesis. Half of the course is devoted to the culture and cultural role of major American cities, including Boston, New York, Philadelphia, Los Angeles, San Francisco, New Orleans, Chicago, and Charleston.

Mr. Bowden

Offered every year

156 IMAGES, SYMBOL AND MYTH IN THE AMERICAN WEST/ Lecture, Discussion

Americans from the first made the West what they wanted it to be: Garden of the World, Eldorado, Cibola, Passage to India, Great American Desert, Great Prairie, Garden in the Grassland. A westering people invested this land with heroes, hunters, horse-riding Indians, trappers, scouts, cowboys, oil magnates, land boomers, and movie tycoons. The West presents a kaleidoscope of images of both outsiders and insiders, and this course considers the origins and changes in these images, their effects on behavior, and their imprint on the land. Emphasis throughout is on the methods and skills of those concerned with reconstructing the geographical knowledge (geosophy) of people of different backgrounds, roles, regions, and times.

Mr. Bowden

Offered every other year

177 CULTURAL ECOLOGY IN ARID LANDS/ Lecture, Discussion

Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population.

Mr. Johnson

Offered every other year

196 CULTURE AND SPORT/ Discussion

Readings in humanities "texts," meetings focused on film, and frameworks from the social sciences are used to explore a number of American games/sports (and their European progenitors) as expressions of American history, character values, environment, self-image, mentality, economic ethos, and institutions. Themes are: (1) the relation between the character and structure of the games and their success among different groups of Americans; (2) the timing of adoption of the games; (3) explanations for the transformation of the games from European and early forms; (4) deviation of professional and amateur variants; (5) scale and nature of sport as a business. Athletics, boxing, cricket, baseball, soccer, rugby, football, basketball, hockey, and tennis, among others, are considered. Classes meet twice weekly. The class period is extended on alternate weeks for special events (e.g., films).

Mr. Bowden

Offered every other year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT/ Discussion

Based on readings drawn from medical and historical geography, biological science, and the history of American medicine and public health, this course takes a synoptic view of concepts and practices concerning health and disease as a form of environmental cognition and management. Discussion topics range from the changing disease environments of early New World migrants and inhabitants to present-day concerns over environmental health hazards, but emphasis is on our societal interactions with urban-industrial disease environments in the last hundred years.

Mr. Koelsch

Offered every other year

240 THE END OF AMERICA: LOS ANGELES/ Discussion

The modern city reflects the values and forces that have shaped Western culture in its westward course. In the last century the history of Los Angeles—the western end of American space—embodies better than that of any other city the polemic between traditional and technological notions of the modern city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit, perhaps even of the end of the spirit. This cluster course is designed to explore the changing notions of the city and the American attitude toward the culture of cities through close examination of the history, geography, literature, and film, associated with Los Angeles. Common sessions are conducted on Thursday afternoons (3-5 p.m.). Students interested in participating in the cluster should enroll in one of the three courses that constitute the cluster which is listed as geography, comparative literature, and English.

Mr. Bowden

Offered every other year

243 ECOLOGY, CULTURE AND THE CITY (SENIOR SEMINAR)/

Discussion, Seminar

An examination, from the perspective of cultural ecology, of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts include primitive, traditional, and modern worlds; stages of economic growth, interaction, and integration; core and periphery, zonation; gradient ecosystem; rural-urban continuum; and city and country. A senior seminar in cultural geography.

Mr. Turner

Offered every year

249 CITY, SPACE AND CULTURE (SENIOR SEMINAR)/ Discussion, Seminar

An examination from the perspective of cultural urban geography of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts include primitive, traditional, and modern worlds; stages of economic growth, interaction, and integration; core and periphery; zonation; gradient ecosystem; rural-urban continuum; and city and country. A senior seminar in cultural geography.

Mr. Bowden

Offered every year

250 HISTORICAL GEOGRAPHY OF THE EASTERN UNITED STATES/ Lecture, Seminar

Surveys the evolution of the continental United States east of the Mississippi River from the Age of Discovery until about 1900. Elements of cultural, economic, social, and political geography are integrated into a comprehensive historical framework. Appraisals of American society and culture, and of regional and national character, are evaluated against that background.

Staff

Offered every other year

253 NEW ENGLAND LANDSCAPE/ Lecture, Discussion

The mountains, rivers, fields, villages, and cities of New England bear the unmistakable imprint of a succession of peoples: Indians, Puritans, Yankees, new immigrants, and technocrats. Through the use of field trips and library sources, each layer of occupation is removed and the characteristic features, artifacts, settlement patterns, and complexes representative of each era exposed. Emphasis is on the representative and the vernacular, and on rhythm, texture, symbol, and metaphor embedded in characteristic places rather than on the unique element.

Staff

Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS/ Lecture, Seminar

A mystique exists about the humid tropics. Mid-latitude biases have led to inaccurate assessments of the composition of these wet, hot lands, of traditional uses of them, and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region.

Mr. Turner

Not offered on a regular basis

279 AMERICAN LANDSCAPE/ Lecture

Every landscape contains a record of the history, ecology, values, and images of the culture(s) that produced it. Those messages are waiting to be read and interpreted by the informed observer. The American landscape

encapsulates the American encounter with environment, the emergence of distinctive settlement and livelihood patterns, the dynamic tension between regional and national landscapes, and changing cultural attitudes toward the use and abuse of American space. An interdisciplinary approach featuring geographic, historical, literary, and artistic sources broadens this analysis of the contemporary landscape. Field trips required.

Mr. Johnson

Offered every other year

284 LANDSCAPES OF THE MIDDLE EAST/ Lecture, Seminar

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Literature and ethnographic description supplement geographic analysis.

Mr. Johnson

Offered every other year

299 AGRICULTURE IN TRADITIONAL ECONOMIES/ Lecture, Seminar

Subsistence, transitional, and smallholder agriculturalists are the focus of investigation. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on the theories of their change.

Mr. Turner

Offered every other year

312 SEMINAR: AGRICULTURE AND DEVELOPMENT/ Seminar

A reading seminar on major interdisciplinary themes dealing with various aspects of agricultural growth and development among traditional farmers and Third World countries. Issues of study include growth vs. development, transitional farming behavior, and constraints to production.

Mr. Turner

Offered every other year

330 SEMINAR IN CULTURAL ECOLOGY/ Seminar

The "ecological transition," the increasing incorporation of nature into human culture, is the point of departure for an examination of the theory, method, and policy relevance of cultural ecology. Prerequisite: Geography 177 or equivalent.

Mr. Johnson, Mr. Turner

Offered every other year

340 ECOLOGY AND PREHISTORY/ Seminar

Explores various topics of cultural ecology in prehistory. Thematic content varies, but can include: rise and fall of populations, origins of domestication, environment and rise of civilizations, and others.

Mr. Johnson, Mr. Turner

Offered every year

367 IDEAS OF CULTURE/ Seminar

The quest of cultural geography is to bring the ideas of culture embedded in the humanities and the sciences to an understanding of geography's traditional concerns—place and space, ecology and landscape. Culture is defined as the ideal (a state or habit of mind), the documentary (the body of intellectual and moral activities), and the social (a whole way of life which expresses certain meanings and values not only in art and learning, but also in institutions and social behavior) (Raymond Williams). Examines the meanings of culture in geography, the relations between culture and humanism, society and economy, and the historical and philosophical underpinnings of the concept.

Ms. Pratt

Offered every other year

PHYSICAL GEOGRAPHY OF HUMAN SYSTEMS

014 INTRODUCTION TO PHYSICAL GEOGRAPHY/ **Lecture**

A basic inquiry into components of geomorphology and climatology. The role of man as a critical agent in physical geography is included in a part of the course that reviews inadvertent climatic modification and alteration of the earth's surface by man's activities. Three exams.

Mr. Berry, Mr. Lewis

Offered every year

111 GEOMORPHOLOGY OF HUMID TROPICS/ **Lecture, Discussion**

The humid tropics, home of the rainforest and savanna are areas of special interest to physical geographers. Deep weathering of rocks, rapid soil erosion when the forest or grasses are removed, great rivers in the tropics, the devastating impact of human intervention are among the topics explored.

Mr. Berry, Mr. Lewis

Offered every other year

112 BIOGEOGRAPHY/ **Lecture**

Past and present geographical distributions of plant and animal species are considered in relation to continental drift, species interactions, dispersal strategies, biological evolution, and human activity. Island biogeography and the biogeography of tropical vascular plants are emphasized.

Staff

Offered every year

114 PLANET EARTH: THE DYNAMICS OF ITS SURFACE/ **Lecture**

The theory of plate tectonics is explored in relation to the uplift of mountains, continental drift, and volcanism on the ocean floor. The gradual wearing down of the earth's surface by hydrological processes is emphasized in the latter part of the course, and students have a chance to examine these processes in the field. The processes that shape the surfaces of other planets in our solar system are also examined.

Staff

Offered every year

118 ENVIRONMENTAL EARTH SCIENCE/ **Lecture**

Examination of the basic concepts and processes within the earth sciences, relative to the evaluation of risks and decisions on future policies of land use and resource utilization. The emphasis is on aspects of the environment of particular interest to geographers, geologists, and planners.

Staff

Offered every other year

122 THE ATMOSPHERE AND DYNAMIC CLIMATOLOGY/ **Lecture**

The introduction to climatology stresses the concepts and principles necessary in understanding the climatic system. These concepts are applied to various regional climatologies, climatic change, and current problems in atmospheric science (e.g., air pollution, city climates and weather modification). This is intended for the physical geography student and others wanting a complete background (for an introductory level) to physical climatology.

Ms. Nicholson

Offered every year

135 CLIMATE AND THE NEXT CENTURY: PANIC OR PANACEA/ **Lecture, Discussion**

Recent world-wide droughts, extraordinarily severe winters, the world energy crisis—these three current world problems have raised a two-fold issue concerning adaptation to climate. Many scientists feel we are facing the prospect of an irreversible climatic change, perhaps induced by man,

and society must prepare to adjust. At the same time, coming to terms with climate—constant or changing—can help us face other societal concerns. This course considers both aspects, and includes a series of workshops on such issues as climatic change, architecture and climate, alternative energy, air pollution, climate and urban design, environmental adaptation, desertification, weather modification, and climatic hazards. Appropriate for nonmajors with no prerequisites.

Ms. Nicholson

Offered every year

202 ADVANCED TOPICS IN CLIMATOLOGY/ Lecture, Seminar

Examines a number of special topics in climatology. The focus depends on the interests of students enrolled, but topics are chosen from the areas of microclimatology, mesoscale meteorology, urban climates and air pollution, climatic change, climatic statistics, historical and paleo-climatology, and climatic teleconnections. A prerequisite for the urban climates seminar in geography. Prerequisite: basic physics or Geography 122.

Ms. Nicholson

Offered every other year

211 INTRODUCTION TO METEOROLOGY/ Lecture

Presents a calculus-based introduction to meteorology. Emphasis on atmospheric dynamics and thermodynamics, precipitation processes, and the general circulation of the atmosphere. Prerequisites: Physics 110 or equivalent, calculus; for geography majors, also Geography 135 or Geography 122.

Ms. Nicholson

Offered every other year

213 HOW PEOPLE AFFECT THE PHYSICAL WORLD (SENIOR SEMINAR)/ Discussion, Seminar

Many soil, water, and vegetation systems around the world are well managed for human well being. Others are not. To manage the physical world well is increasingly necessary. This course explores the physical aspects of people's use and misuse of the world we live in.

Mr. Berry, Mr. Lewis

Offered every year

215 FLUVIAL PROCESSES IN GEOMORPHOLOGY/ Lecture, Discussion

The focus is on the relations between hydrology and geomorphology. The basic properties of hydraulic geometry, erosion, and deposition are explored.

Mr. Lewis, Staff

Offered every other year

216 THE PHYSICAL ENVIRONMENT OF ARID LANDS/ Lecture, Discussion

Presents an analysis of the landscapes and atmospheric environment of arid areas of the earth and the dynamics under which they operate. The focus is on climate and related geomorphic processes. The course emphasizes the arid Southwest of the United States and the African Sahel.

Ms. Nicholson

Offered every other year

218 SEMINAR IN PHYSICAL ENVIRONMENT AND DEVELOPMENT/ Seminar

The world is changing more rapidly than at any time in history. This course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in-depth case studies.

Mr. Berry, Mr. Lewis

Offered every other year

220 AGRICULTURE AND GRAZING: A PHYSICAL PERSPECTIVE/

Lecture, Discussion

Agricultural and grazing practices with their relations to the environment are examined. Various physical and cultural/ economic situations including the developed and developing world are the focus for the inquiry.

Mr. Lewis

Not offered on a regular basis

223 HUMAN ACTIVITY AND GEOMORPHOLOGY/ Lecture,

Discussion

The role of man as the principal geomorphic agent in both urban and rural environments is emphasized. The problem of integrating economic activity within the constraints of the physical environment to minimize negative geomorphic responses is explored.

Mr. Berry, Mr. Lewis

Offered every other year

239 FIELD METHODS IN THE EARTH SCIENCES/ Seminar, Laboratory

Methods of measuring and monitoring the earth's physical environment. Field and laboratory work will be required. Students will have an opportunity to initiate research projects and gain experience in acquiring data in the areas of meteorology, hydrology, pedology, geomorphology, and/or plant ecology.

Staff

Offered every year

260 SEMINAR IN ATMOSPHERIC SCIENCE AND URBAN

CLIMATOLOGY/ Seminar

Deals with the effect of cities on the climatic environment. Topics include air pollution, urban effects on weather variables (e.g., the "heat island" and rainfall), urban design as related to climate, and climatic modeling. Prerequisite: basic physics or Geography 122.

Ms. Nicholson

Offered every other year

262 SEMINAR IN GEOMORPHOLOGY/ Seminar

Explores patterns of thought in modern geomorphology focusing particularly on fluvial and mass wasting processes acting directly on hill slopes.

Mr. Berry, Mr. Lewis

Offered every other year

URBAN/SOCIAL/PLANNING

018 INTRODUCTION TO URBAN GEOGRAPHY/ Lecture, Laboratory

An introduction to the study of urban form, function, and problems. Themes to be pursued include the process of urbanization, migration, community development and governance, location of various urban utilities, the economic basis of cities, and the problems associated with growth.

Mr. Knos

Offered every year

162 URBAN ECONOMIC GEOGRAPHY/ Lecture

Focus is on the system of cities, the dynamics of interurban and interregional space economies, and the role of cities in regional development. Course also focuses on changing patterns of urban land use, theories of urban land use, and data requirements and methods for handling problems in urban land use planning.

Mr. Karaska

Offered every year

165 SIMULATING THE CITY/ Discussion

Using census data and information from other sources, students learn how to represent and analyze the spatial organization of the city.

Mr. Knos

Offered every year

170 URBAN SOCIAL GEOGRAPHY/ Lecture, Discussion

Focuses on the definition and importance of social areas within cities, patterns and processes of residential segregation, the role of the neighborhood in urban life, and the functioning of the urban housing market. Also examines urban planning approaches to solving housing and neighborhood problems.

Ms. Pratt

Offered every year

222 DYNAMICS OF CITY GROWTH/ Lecture, Discussion

This is an historical survey of the internal structure and external relations of urban areas. Stress falls on North American cities through the nineteenth century, with reference to European antecedents. Critical discussion of relevant theories and models of city growth is included.

Ms. Pratt

Offered every other year

233 PLANNING FOR URBAN PUBLIC SERVICES/ Lecture, Discussion

With a focus on the North American city, this course analyzes current patterns and problems in the distribution of public services to local citizenry. The course explores the approaches open to planners in locating public facilities.

Ms. Hanson

Not offered on a regular basis

245 SENIOR SEMINAR IN URBAN GEOGRAPHY (SENIOR SEMINAR)/ Seminar

An examination of major topics and methodological issues in contemporary urban geography. The senior seminar in urban geography.

Ms. Hanson

Offered every year

254 URBAN TRANSPORTATION: PROBLEMS AND PROSPECTS/ Lecture, Discussion

What are the dimensions of the urban transportation problem? How can we analyze the problem so as to propose policies that might help to solve it? Topics include transportation and land use, transportation and energy, the car vs. public transit, and transportation and equity issues. We examine aggregate and disaggregate approaches to analyzing patterns of spatial behavior and evaluate the relative effectiveness of these approaches in posing solutions to urban transportation problems.

Ms. Hanson

Offered every year

273 SEMINAR IN URBAN GEOGRAPHY/ Seminar

Through readings and discussion, this seminar focuses on major research problems in urban geography. Each student formulates a research problem and designs and executes a research project. Prerequisites: Geography 141 and 110.

Ms. Hanson

Offered every other year

ENVIRONMENTAL AFFAIRS/MANAGEMENT

019 INTRODUCTION TO ENVIRONMENTAL MANAGEMENT/

Lecture, Discussion

Designed to explore some of the basic concepts and problems involved in the study of natural resources and environmental management. This is accomplished by examining the physical principles management practices and environmental issues involved in three major cycles of the biosphere: the hydrolytic cycle, carbon cycle, and nuclear fuel cycle.

Mr. Kates, Ms. Emel

Offered every year

155 ENVIRONMENTAL MANAGEMENT AND RESOURCE DEVELOPMENT IN CHINA/ Lecture

A survey of the world's most important and complex set of environmental and resource problems: environmental management and resource development in China, the home of one-quarter of the earth's population. Land and water, agricultural resources, energy and pollution, urban areas, human resources, education and technology, natural and historic areas. Environmental and resource issues in the larger context of Chinese civilization. Prospects for the future.

Mr. Major

Offered every other year

158 AGRICULTURAL RESOURCE SYSTEMS/ Lecture

Examination of agricultural systems, their processes, problems, and prospects; in part, the course focuses on issues of agricultural decision-making, culture and agriculture, food production, distribution and hunger, technology and resource requirements, environmental impacts, and alternative agricultural futures. The course draws upon case studies in North America, Asia, and Latin America.

Staff

Offered every other year

176 ENVIRONMENT/1984/ Lecture, Discussion

An assessment of major environmental issues, both national and global in nature, confronting the United States in 1984. Particular attention is given to problems requiring governmental action: acid rain, hazardous chemical wastes, renewal of the Clean Air Act, long-term energy planning, world water shortages. Intended for those desiring introductory or general knowledge.

Mr. Kasperson

Offered every year

208 ENVIRONMENTAL COGNITION AND BEHAVIOR/ Lecture, Discussion

Reviews the theories, methods, and research findings in the field of environmental perception. Particular attention is given to the development of spatial cognition and to cross-cultural studies in cognition.

Staff

Not offered on a regular basis

210 SOCIO-ENVIRONMENTAL IMPACT ANALYSIS/ Lecture, Discussion

Aims to provide an overview of the theories, methods, and models used in assessing the social and environmental effects of planned development. Attention is given to both empirical and ethical issues. Cases are analyzed in terms of the available policy and institutional means (such as social impact statements), as well as the critical literature on the subject. The goal

is to equip the student with both analytical skills and a critical perspective necessary to evaluate the social aspects of major projects and facilities.

Mr. Kasperson

Offered every other year

214 SEMINAR IN RIVER BASIN PLANNING/ Seminar

Concentrates on one river basin and the studies made and plans prepared to develop this river basin. Students work independently on specific sections of the case under consideration. Seminar sessions give participants the opportunity to present their independent work and discuss it in a broader context. Readings, discussions, and research focus on objectives, techniques, and results and relate them to the appropriate economic and social values.

Mr. Schwarz, Mr. Major

Offered every other year

221 APPLIED SURFACE WATER HYDROLOGY/ Lecture

Focuses on practical applications of hydrology for water resources management. Topics explored include rain fall/runoff relationship, hydrograph analyses, frequency studies of floods and droughts, reservoir operation, and flood routing. Both the techniques and the application to problems such as water supply and flood control are covered. Prerequisite: Geography 014 or permission of instructor.

Mr. Schwarz, Staff

Offered every other year

226 HOW SAFE IS SAFE ENOUGH?: RISK ASSESSMENT AND HAZARD MANAGEMENT/ Lecture

For advanced students, this is an introduction to the theory and methods of risk assessment and hazard management of technological hazards. Case study material is drawn from concurrent research including hazards of consumer products, energy production, toxic chemicals, and transportation.

Mr. Kates

Offered every other year
(not offered in 1984-85)

231 SEMINAR: POLITICS AND THE ENVIRONMENT

For the student with professional career or advanced study objectives. The seminar is organized around current research themes or selected policy issues. Each of these is treated in a two-week period which includes a state-of-the-art assessment, case applications, and a short student position paper on an assigned question. Representative issues include the environmental movement, models of the policy process, mediation of environmental conflicts, the politics of risk, and the role of the mass media. Permission of instructor required.

Mr. Kasperson

Offered every other year

238 MANAGING THE COASTAL ENVIRONMENT/ Lecture

Refer to course description under Environment, Technology and Society.

Mr. Ducsik

248 HAZARDS OF THE WORKPLACE/ Lecture, Discussion

Surveys the trends and extent of occupational hazards in the United States and inquires into the adequacy of current data bases, public policy, and managerial efforts. Attention is given to the performance of corporations, OSHA, labor unions, workers' compensation, and approaches to worker

protection. Some cross-national comparisons are included. Alternatives to current managerial approaches are defined and discussed.

Mr. Kasperson

Offered every other year

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT (SENIOR SEMINAR)/ Lecture, Discussion

An examination of current approaches and methods in environmental management, with emphasis upon theories and skills needed for applied work in the field. An advanced undergraduate seminar intended particularly for geography seniors to provide an integration of skills and concepts in environmental geography through the examination of concrete management problems. Topics include history of environmental geography, environmental data bases, environmental and social impact assessment, writing research proposals, decision-making aids.

Mr. Kasperson, Staff

Offered every year

256 PROBLEMS IN WATER RESOURCES PLANNING (SENIOR SEMINAR)/ Seminar

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: A 200-level course in environmental assessment, physical geography, economics, or environment, technology and society, or permission of instructor.

Mr. Schwarz

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION/ Lecture

Introduction to the theory of multiobjective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications.

Mr. Major

Offered every year

259 GEOGRAPHY OF AGRICULTURE IN THE UNITED STATES/ Lecture

Evaluation of the agricultural resource base of the United States; analysis of farm production models, market organization, and policy issues impacting on agriculture.

Ms. Emel

Offered every year

269 ENVIRONMENT AND DEVELOPMENT IN AFRICA/ Lecture, Discussion

Efforts to promote economic growth in sub-Saharan Africa have resulted in mixed outcomes. Few successful development projects exist, and the difficulties posed by environmental constraints and human impacts on environment remain considerable. The complex relationship between nature, society, and technology in the use of Africa's resources is the focus of the course.

Mr. Johnson

Offered every other year

271 GROUNDWATER RESOURCES: AN INTRODUCTION TO GROUNDWATER HYDROLOGY AND MANAGEMENT/ Lecture, Discussion

An introduction to both the geological and hydrological factors controlling the occurrence and development of groundwater and the methods and impacts of groundwater management.

Ms. Emel

Offered every year

275 CITIZEN PARTICIPATION: THEORY AND APPLICATION/ Lecture, Discussion

Erosion of public confidence in the institutions and professionals charged with managing societal affairs has brought proposals that decision-making be conducted more openly and with fuller citizen participation. This course explores a range of issues surrounding this theme. Major theories regarding the nature, goals, and forms of participation are examined and contemporary experience with participatory programs is reviewed.

Mr. Kasperson

Offered every other year

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY/ Seminar

Designed for thesis- and dissertation-level students working in the areas of resources, development, and environmental cognition, who are developing proposals or preproposal research papers. The seminar provides a forum for discussion, criticism, and practical advice.

Staff

Offered every other year

348 RESEARCH IN ENVIRONMENTAL HAZARDS/ Seminar

Advanced research in the theory of environmental hazards with reference to management and decision-making.

Mr. Kasperson

Not offered on a regular basis

350 NATURE, SOCIETY AND TECHNOLOGY: THEORIES OF THE HUMAN ENVIRONMENT/ Seminar

Examines theories of the human environment as one-dimensional, partial, and interactive theories of nature, society, and technology.

Mr. Kates

Offered every other year
(not offered in 1984-85)

351 RESOURCE GEOGRAPHY: THEORY AND METHOD/ Seminar

Examination of major theories and methods of resource estimation, allocation, and management, providing coverage of the scholarly literature of the field.

Mr. Kasperson, Ms. Emel

Offered every other year

353 RESEARCH IN ENVIRONMENTAL MANAGEMENT/ Non credit seminar

Monthly colloquia on topics of research interest to graduate students and faculty specializing in this field. Presentations by visiting scientists, research project members, and graduate student are included.

Staff

Offered throughout the year

358 PROFESSIONAL SEMINAR IN RESOURCE PROJECT EVALUATION/ Seminar

Covers best-practice applied methods of resource project evaluation as suggested by current research, the procedures of the World Bank, and

leading U.S. resource agencies. The intent of the seminar is to bring advanced students to a level of preparation adequate for professional work in resource project evaluation. Prerequisite: Geography 257 or equivalent.
Mr. Major Offered every year

CARTOGRAPHY

180 FIELD MAPPING/ Lecture, Laboratory

A basic introduction to the collection of field data for the making of maps. It covers the fundamentals of field survey, including basic instrumentation, and the assembly of both qualitative and quantitative material for practical cartography. Project work is involved.

Mr. Steward

Offered every year

181 INTRODUCTION TO CARTOGRAPHY/ Lecture, Laboratory

An introduction to the fundamentals of map logic and cartographic methods with an emphasis on the use of graphic tools. The course includes a number of practical map-making exercises.

Mr. Steward

Offered every year
(beginning 1985-86)

189 REMOTE SENSING OF THE ENVIRONMENT/ Lecture, Laboratory

Offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. Covers the use of remotely sensed data, such as air photos and a variety of satellite imagery, to provide answers to many of the problems about our physical and human environment.

Mr. Steward

Offered every year

217 HISTORY OF CARTOGRAPHY/ Lecture

A basic survey of the history of mapping until about 1900. Topics include the methodological basis of investigations into the subject; maps of primitive peoples; the classical, medieval and Renaissance periods; the rise of national surveys; the relationship of mapping to exploration; and the cartography of North America.

Mr. Steward

Offered every year

274 SEMINAR IN CARTOGRAPHIC DESIGN/ Seminar

Explores the common ground between graphic design/fine arts and cartography/geography in the area of map design. Draws upon a variety of approaches and methodologies, seeking points of consensus and clarity that can aid in both the understanding and making of maps. Capitalizes upon the different skills and interests of the professors involved and brings students into an active seminar exchange. Aspects covered include typography, color, psychophysical and cognitive approaches, aesthetics, communication and design theory, and the ideas of metacartography.

Mr. Steward, Mr. Eastman

Offered every year

292 CARTOGRAPHIC DESIGN AND PRODUCTION/ Lecture, Laboratory

A course in the detailed preparation of cartographic artwork for map production. It covers a range of work in basic compilation, drafting, and photographic work. Prerequisite: Geography 181 or permission.

Mr. Eastman

Offered every year

294 PROBLEMS IN CARTOGRAPHY/ Seminar

An examination of perennial and new problems in cartography ranging from considerations of a philosophical and historical nature to the concerns of contemporary mapping. Prerequisite: permission.

Mr. Steward, Mr. Eastman

Offered every year

296 ADVANCED REMOTE SENSING/ Lecture, Laboratory

A more detailed consideration of the use of remote sensing instrumentation for presenting and analyzing data about the earth's surface. It includes both manual and computer analysis of photographic and satellite imagery. Prerequisite: Geography 189 or permission.

Mr. Steward, Mr. Eastman

Offered every year

298 INTRODUCTION TO AUTOMATED CARTOGRAPHY/ Lecture, Laboratory

A "hands-on" introduction to the fundamentals of computer graphics and other applications in computer-assisted cartography. The course covers programming logic, the production of thematic and general geographic maps, and the broad nature of geographic information systems. Prerequisite: Geography 181 or permission.

Mr. Eastman

Offered every year

REGIONAL/INTERNATIONAL DEVELOPMENT/POLITICAL ECONOMY**015 INTRODUCTION TO ECONOMIC GEOGRAPHY/ Lecture**

Theories of the geography of the production of human existence out of nature are presented. The course emphasizes contemporary economic, social, and environmental problems. These include over-population, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness.

Mr. Peet, Mr. Karaska

Offered every year

125 DEVELOPMENT PROBLEMS

Refer to course description under International Development.

Ms. Thomas

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT/ Lecture

Do conventional explanations of underdevelopment strike you as false and unconvincing? A powerful and refreshing alternative perspective exists in Marxist and neo-Marxist theories of social change. This course reviews the main currents within this rich stream including theories of dependency, imperialism, accumulation world systems, unequal exchange, and mode of production. Marxist concepts are used to examine the international role of capital, multinational corporations, and regional decline. Finally, the course presents alternative models of socialist development.

Mr. Peet

Offered every year

168 ANTHROPO-GEOGRAPHY/ Lecture, Discussion

Theories of the relations between the natural environment and human nature, culture and society. The works of Darwin, Spencer, Kropotkin,

Marx, Semple, and Wittfogel are examined as precursors to modern theories of human-environmental relations.

Mr. Peet

Offered every year

235 GEOGRAPHY OF THE CAPITALIST WORLD SYSTEM/ Lecture, Discussion

Review of world systems theories, crucial phases in the development of the capitalist world system, history of center-periphery relations, underdevelopment, multinational corporations and the new international division of labor, the geography of consciousness and spread of American culture. The course emphasizes a particular geographic problem of current interest each time it is offered.

Mr. Peet

Offered every other year

264 REGIONAL ECONOMIC AND SOCIAL DEVELOPMENT/ Lecture, Discussion

Regional development and underdevelopment theories are applied to the advanced capitalist countries. The course focuses on such issues as Frostbelt-Sunbelt competition, the underdevelopment and restructuring of old industrial regions, economic and social change in the New England region, and the role of the state in the process of regional economic development. Case studies of industrial decline—the automobile and steel industries—and industrial growth—high-technology industries—are presented.

Mr. Peet

Offered every other year

289 PROBLEMS IN POLITICAL ECONOMY OF DEVELOPMENT (SENIOR SEMINAR)/ Seminar

Examines the current state-of-the-art and debates surrounding differing theories of underdevelopment and their implications for international and regional development.

Mr. Peet, Staff

Offered every year

365 SEMINAR IN SOCIAL AND ECONOMIC GEOGRAPHY/ Seminar

Theories of regional development and underdevelopment, industrial restructuring, and the role of the state are examined at an advanced level. A background in Marxist underdevelopment theory is required.

Mr. Peet

Offered every other year

Geology

PROGRAM FACULTY

B.L. Turner II, Ph.D., *director*: Graduate School of Geography

UNDERGRADUATE PROGRAM

There is no formal program in geology at this time. However, two introductory level courses in geology are offered on a regular basis through the Graduate School of Geography. In addition, those students interested in geological studies can pursue more advanced work on these topics in the physical geography stream of the Undergraduate Geography Program. Specifically the physical geography stream offers a number of courses in geomorphology—the earth science that deals with the physical structure of the earth's surface and the processes that create them. This coursework can be supplemented with courses in climatology, meteorology, soils, and biogeography.

COURSES

100 INTRODUCTION TO GEOLOGY/ Lecture, Laboratory

Offers an introduction to the basic principles of physical and historical geology. Topics covered include rocks and minerals, volcanism and mountain-building, glaciers, weathering and erosion, and the history of life on earth. Contemporary ideas in plate tectonics emphasized and discussed in relation to the concept of geologic time.

Staff

Offered every year

101 INTRODUCTION TO HISTORICAL GEOLOGY/ Lecture, Laboratory

Offers an introduction to the geologic record of life on earth. Evolutionary patterns of a wide variety of faunal and floral life forms are discussed through a systematic survey of geologic, sedimentologic, and paleontologic evidence. Fossil specimens are examined and discussed in the context of the geologic evolution of the North American continent. Prerequisite: Geology 100 or permission of instructor.

Staff

Offered every year

German

See Department of Foreign Languages and Literatures.

Government and International Relations

DEPARTMENT FACULTY

John C. Blydenburgh, Ph.D., *chair*: elections, polling, national politics

Brian J. Cook, Ph.D.: environmental policy, urban policy, American politics

Cynthia H. Enloe, Ph.D.: women and politics, militarization, Asian and Black politics

Sharon P. Krefetz, Ph.D.: urban politics, suburban politics, women and politics

Knud Rasmussen, Ph.D.: political theory, European politics, business and politics

Zenovia A. Sochor, Ph.D.: Soviet Union, communist countries, foreign policy

Patricia L. Sykes, Ph.D.: Constitutional law, West European politics, American government

Kent C. Trachte, Ph.D.: international relations, international political economy, foreign policy, national security policy

ADJUNCT FACULTY

Ronald P. Formisano, Ph.D.

Roger E. Kasperson, Ph.D.

Ann T. Schulz, Ph.D.

Barbara P. Thomas, Ph.D.

EMERITI

Morris H. Cohen, Ph.D.

UNDERGRADUATE PROGRAM

The study of politics at Clark University is the study of some of the most important questions that face mankind: When and how should force be used in relations among competing interests? What are the rights of the individual versus the rights of the state? What is a fair distribution of scarce resources? And, most important, who decides such questions and how? The department offers courses that address these questions and others in international relations, in American politics, in comparing political systems, and in public policy formation and implementation. The aim of the curriculum is to provide analytic concepts, basic information, and a theoretic basis to enable the student to develop her or his own answer to these questions.

Requirements for the Major

The major is organized in such a way as to provide a general introduction to the study of politics as well as an opportunity to explore one particular subfield in greater depth. The subfields allow concentration either on American or foreign politics. There are four subfields offered by the Government Department: American politics, comparative politics, international relations, and public policy and administration.

Government majors must take thirteen courses in all. Although the number of required courses is fixed, students have a considerable amount of leeway in choosing particular courses. Most of the courses are in the Government Department. A few are from disciplines outside of the Government Department; these are intended to complement the study of politics with other perspectives, as well as to establish the relationship between government and other essential sectors of society.

The thirteen required courses are divided into two categories:

- (a) General government requirements
- (b) Subfield specialization requirements

General government requirements

Seven courses:

- (1) one introductory course in addition to the introduction to your selected subfield specialization,
- (2) Economics 10, *Issues and Perspectives*,
- (3) one course in normative political theory,
- (4) one course in research methods and skills, and
- (5-6-7) three government courses from outside the subfield.

Subfield specialization requirements

Six courses:

- (8) one subfield introductory course (*Introduction to American Government*, *Introduction to International Relations*, *Introduction to Comparative Politics*, *Introduction to Public Policy and Administration*),
- (9-10) two additional government courses in your chosen subfield, and
- (11-12-13) three courses, related to your subfield, from outside the Government Department. (See list of related courses, available from the Government and International Relations Department Office.)

In summary, a total of thirteen courses—nine in government, one in economics, and three from related disciplines—must be taken in order to fulfill the requirements for the government major.

The International Relations Concentration

The international relations concentration was established in 1980 in conjunction with the Department of History. Students choosing this concentration must still satisfy the general requirements for the government major including Economics 10, *Political Theory*, *Research Methods*, a second introductory course, and three other government courses not in the international relations subfield. The concentration itself normally includes Government 169, History 238, Economics 108, History 190, Government 249, and a seminar. The possibility also exists for specializing in either political economy or diplomacy. Students who complete the appropriate courses receive a notation on their final transcript: "Concentration in International Relations."

Honors in Government

Students with an exceptionally good academic record by the end of the junior year may apply to the Honors Program in the Government Department. Students can achieve *honors* only by successfully completing the Honors Program. This involves conducting extensive research and writing and defending a senior thesis. The Honors Program helps to expend research and writing skills in an in-depth analysis of some topic. There is a great deal of elective work involved; but at the same time there is a great intellectual and personal satisfaction in mastering one area of scholarship.

Student Handbook

The Government Department publishes a handbook, which has a more extensive description of programs, courses, and faculty, as well as other information relevant to the major or interested student. Copies are available in the Academic Center, Room 302.

PROGRAM AND GENERAL COURSES

107 RESEARCH METHODS IN POLITICS/ Lecture, Discussion

The main concern of this course is the logic of the research process: from developing a research design (e.g., formulating and stating testable hypotheses, operationalizing concepts) to selecting a sample and collecting appropriate data (e.g., using the computer to generate contingency tables and calculate measures of association). The broad concepts that underlie various methods and techniques are considered, as are statistical manipulations necessary to employ them. Students use data sets surveying political attitudes and behavior in recent U.S. elections for homework assignments and computer projects.

Ms. Krefetz

Offered every year

202 APPLICATIONS OF GAME THEORY

Game theory was invented by John Von Neuman in the 1920s as a language and a logic for analyzing human conflict. It purports to be useful (and your professor believes it is) to systematically identify the best strategies for resolving many types of conflicts. Emphasis in this course is on understanding and applying the language and the logic. But a substantial amount of the course deals with applications and illustrations, for example, to international relations, nuclear confrontation, political campaigning, and a host of other real-life situations. Emphasis is on "two-person" models with a selective review of "n-person" models. Students learn how

to use bargaining, threats, commitments, mediators, ignorance, and power in resolving conflicts.

Mr. Blydenburgh

Offered every other year

205 ROOTS OF POLITICAL THOUGHT/ Lecture, Discussion

A study of the development of Western political thought from the Socratic philosophies to Hobbes. Trend-setting philosophers and ideas transcending their time in importance are given special attention. The evolution of political thought is discussed in the context of influential, social, political, and economic forces.

Mr. Rasmussen

Offered every year

206 RECENT POLITICAL THEORY/ Lecture, Discussion

A study of modern political theory as developed in the context of the social, political, and economic forces that have shaped Western thought since the French Revolution. Socialism, democracy, and conservatism are discussed in both an evolutionary and contemporary setting.

Mr. Rasmussen

Offered every year

295 WRITING FOR UPPER DIVISION STUDENTS IN HISTORY AND THE SOCIAL SCIENCES

Refer to course description under History 295.

Mr. Von Laue

299 SENIOR THESIS IN GOVERNMENT AND INTERNATIONAL RELATIONS

Offered for variable credit.

Staff

299.1 DIRECTED READINGS

Offered for variable credit.

Staff

299.5 SPECIAL PROJECTS

Offered for variable credit.

Staff

299.9 INTERNSHIP

Offered for variable credit.

Staff

INTERNATIONAL RELATIONS COURSES

(Also, see separate catalogue section on International Relations.)

169 INTRODUCTION TO INTERNATIONAL RELATIONS/ Lecture, Discussion

Designed to equip the student with the analytic and conceptual tools to make sense out of the many complexities of international politics. The first part of the course is organized around the concepts of nation-state, sovereignty, power, perception, system, intervention, verbal strategy, and reciprocity. Next, we explore the nuclear relationship between the Soviet Union and the United States in some detail. The final section of the course takes up topics related to North-South relations, the gap between rich and poor nations, and different development strategies. Particular attention is

paid to global corporations, global debt, the International Monetary Fund and the changing international division of labor.

Mr. Trachte

Offered every year

210 INTERNATIONAL ORGANIZATIONS IN WORLD POLITICS/

Lecture, Discussion

Thirty years ago international organizations such as the United Nations expressed the hopes of human society for a more peaceful world order. These utopian hopes were soon disappointed and interest in such organizations waned. More recently the perception of interpenetration of national economies; the recognition that energy, environmental, and disarmament issues among others are global problems; and the development of a Third World alliance have regenerated interest in international organizations. This course surveys functionalism, neo-functionalism, and supranationalism as explanations of the emergence of such organizations. We also examine selected "I.O.'s" such as the OAS, the EEC, OPEC, and the World Bank. Extensive attention is paid to the United Nations system in all its complexity. Government 169 is recommended. Also listed for credit as International Development 210.

Mr. Trachte

Offered every third year

211 MODEL UNITED NATIONS/ Lecture, Discussion

The core component of this course is participation in the Harvard National United Nations Conference and National Model U.N. Conferences. The members of the class represent Clark University at the conferences by acting as delegates from nation-states. Issues ranging from disarmament to human rights to current political crises are researched. Students prepare resolutions and speeches and learn the rules of procedure operative at the United Nations. Oral reports and a written paper also are required. Open to all qualified students though class size is limited and permission of the instructor is required. Government 210 or relevant experience strongly recommended.

Mr. Trachte

Offered every year

239 U.S. FOREIGN POLICY/ Lecture, Discussion

Takes an analytic and historical approach to U.S. foreign policy. First, we identify and distinguish several alternative paradigms for understanding foreign policy. Contrary to the dominant media image, we find that facts are contingent upon one's perspective. What you see depends upon which glasses—orthodox, economic revisionist, ideological revisionist, neorevisionist—you wear. Second, we survey chronologically the strategic, economic, and systemic aspects of U.S. foreign policy since World War II.

Mr. Trachte

Offered every third year

249 INTERNATIONAL POLITICAL ECONOMY/ Lecture, Discussion

Organized around the debate among world systems theory, Marxist theories of imperialism, and liberal developmentalism about the structure of the global economy. The evolution of the global economy from 1450 to the present is analyzed. Themes such as hegemonic cycles, underdevelopment, and imperial dominance organize the historical section of the course. Finally such contemporary issues as the changing international division of labor, the political economy of global debt, and the politics of primary commodity trade receive attention.

Mr. Trachte

Offered every other year

276 PEACE STUDIES/ Lecture, Discussion

What are the dynamics driving the global nuclear arms race? Can it be brought under control? What are the best strategies for pursuing arms control? What are the economic consequences of the nuclear arms race? Is nuclear disarmament possible? These are questions raised by this course. Specific attention is paid to United Nations negotiations, the Partial Nuclear Test Ban Treaty, SALT talks, I.N.F., and other historical and ongoing negotiations. The course concludes with a simulation of Soviet-American arms control talks. Government 169 is recommended as prerequisite.

Mr. Trachte

Offered every third year

283 THE SUPERPOWERS AND THE THIRD WORLD/ Seminar

The purpose is two-fold: (a) to consider the goals and policies of the Superpowers toward the Third World, and (b) to examine specific case-studies where these goals and policies were carried out, amended, or challenged. Some of the underlying questions posed in this course include the following: What are Superpowers' expectations of, and sources of influence on, the Third World? To what degree are North-South issues affected by East-West considerations? How are local problems exacerbated by Superpower intervention? What are the long-range prospects for the international system as a whole?

Ms. Sochor

Offered every other year

289 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

The substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the New International Economic Order, or issues in U.S. foreign policy. Designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor.

Mr. Trachte

Offered every year

AMERICAN POLITICS COURSES**110 POLITICAL THOUGHT IN AMERICA/ Lecture, Discussion**

Begins with the political philosophies of Locke and Montesquieu, and the ideas of the framers of the Constitution. Subsequent lectures trace the development of liberal ideas and institutions in American history. Political and social movements that effectively challenged liberal principles are studied, as well as the liberal response. Primarily for freshmen.

Ms. Sykes

Offered every year

150 INTRODUCTION TO AMERICAN GOVERNMENT/ Lecture, Discussion

Introductory study of the processes and efficacy of the American governmental system. Primarily devoted to an overview of contemporary aspects of the national government, the course includes problems of federalism, salient civil liberties issues, and the roles of Congress, the president, the Supreme Court, and political parties in the decision making process.

Ms. Sykes

Offered every year

170 AMERICAN POLITICAL THOUGHT AND BEHAVIOR/ Lecture, Discussion

There are three major foci for this course: (1) some of the most important ideas that have formed a distinctive American political culture: our shared values, beliefs, attitudes, and expectations from government; (2) how this culture is transmitted by society, i.e., the process of political socialization, through which our political orientations and behavioral predispositions are shaped; and (3) contemporary political attitudes and behavior in the U.S., especially voting in recent presidential elections.

Ms. Krefetz

Offered every other year

172 SUBURBIA: PEOPLE AND POLITICS/ Lecture, Discussion

The growth of suburbs in the United States since the end of World War II has had considerable impact upon the nature of our metropolitan areas. This course focuses on the following questions: Why has this growth occurred? What are the characteristics of the people who live in suburbs? Is suburban homogeneity a myth or reality? How are suburbs governed? What is political participation like? What are the patterns of policy-making in issues such as education, zoning, and property taxes?

Ms. Krefetz

Offered every year

175 WOMEN AND POLITICS/ Lecture, Discussion

An exploration of the political behavior of American women and of the factors that condition their behavior, including: socialization and learning of sex roles, social background and life situation variables, and historical arrangements of political institutions. Among the questions to be considered are: Why are women generally less interested, less active, and less efficacious politically than men are? What are the characteristics of those women who do engage in political activity? What is the likely impact of the women's movement and women's issues on the future behavior of women in politics?

Ms. Krefetz

Offered every year

204 THE AMERICAN PRESIDENCY/ Lecture, Discussion

A study of the constitutional and other powers and functions of the president and the presidency via selected readings and individual research.

Ms. Sykes

Offered every year

209 THE U.S. SINCE 1945

Refer to course description under History 209.

Mr. Formisano

214 SEMINAR: BUSINESS AND POLITICS

Examines the social role of business from a theoretical and a practical point of view. The theoretical aspects are explored through a series of readings of major writers in this area. The practical aspects are dealt with through the use of community resources. This course permits individualized reports in specific areas of interest. Enrollment is limited to 20 students.

Mr. Rasmussen

Offered every other year

215 STATE GOVERNMENT AND POLITICS

This is an overview of the operation of state governments, explaining the distinctive features of states in terms of their individual political, economic, historical, legal, and demographic characteristics. The focus is on how these features explain state political systems in the present and how

they are likely to shape the states of the future. Special attention is given to Massachusetts and other northeastern states. Government 150 is recommended but not required.

Mr. Blydenburgh

Offered every year

220 URBAN GOVERNMENT AND POLITICS/ Lecture, Discussion

The primary focus is on the various socioeconomic and political forces that affect American urban politics and policy-making. Topics discussed include: the social, economic, and political nature of the city; the fiscal crisis; federal and state urban policies; relations between city and suburb; political machines and reformers; the community power debate; mayoral power and styles; city employees; and polity output.

Ms. Krefetz

Offered every year

221 SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES

What difference does it make "who governs?" What sorts of variations are there among cities in their policy outputs in such areas as welfare, housing, urban redevelopment, poverty, the police, and the criminal courts; and what accounts for the differences? Special attention is given to the political aspects of the implementation process and to issues concerning the equity of services delivered. After a critical review of the existing literature, research will be conducted on a policy area of the student's choosing in Worcester and/or other cities. Prerequisite: Government 220 or permission.

Ms. Krefetz

Offered every other year

223 SUBURBAN POLICY ISSUES/ Seminar

Picks up where the introductory suburban politics course leaves off and explores politics and policy making on several major issues in suburban communities, especially zoning and land use, education, and property taxes. Students conduct original research on these issues in Worcester and Boston suburbs. Prerequisite: Government 221 or permission of instructor.

Ms. Krefetz

Offered every other year

224 BLACK POLITICS IN THE UNITED STATES/ Lecture, Discussion

Analyzes the Black political experience today and in the past. Among those topics to be explored are: Black theory and debate, Black politics in cities and labor unions, Blacks in the bureaucracy, and a comparison of Northern and Southern Black politics.

Ms. Enloe

Offered every other year

231 SEMINAR IN POLITICS AND ENVIRONMENT

Refer to course description under Geography 231.

Mr. Kasperson

251 AMERICAN POLITICAL PARTIES AND PRESSURE GROUPS/ Lecture, Discussion

A study of the structure and functioning of the American party system and the role of selected interest groups in American politics, including some ethnic and economic influences. Special emphasis is placed on the processes and problems involved in the nomination and election of the president. Prerequisite: American Government desirable, but not required.

Mr. Blydenburgh

Offered every year

255 THE LEGISLATIVE PROCESS/ Lecture, Discussion

A study of policy-making in Congress, involving problems of legislative organization and procedure, leadership, and presidential-legislative relationships; examined primarily by the case method and by individual research on particular pieces of recent legislation. Prerequisite: permission of instructor. The course is limited to ten students.

Staff

Offered every other year

275 CITIZEN PARTICIPATION IN PLANNING

Refer to course description under Geography 275.

Mr. Ducsik, Mr. Kasperson

282 SEMINAR ON HOUSING POLICIES

A critical examination of federal housing policies and state and local zoning and land use regulations. The major political, economic, and cultural factors that shape the supply, quality, and location of housing in metropolitan areas are explored. The politics of urban redevelopment, public housing, and exclusionary zoning are the main foci.

Ms. Krefetz

Offered every other year

294 ELECTORAL BEHAVIOR/ Lecture, Discussion

Contemporary studies of voting behavior are used to explore the meaning of elections as the linkage between government and citizenry. The course addresses the questions of who votes and why, and it aims to identify and explain long-term trends in elections by focusing on the theory, methods, and data of recent political research.

Mr. Blydenburgh

Offered every other year

COMPARATIVE POLITICS COURSES**106 INTRODUCTION TO COMPARATIVE POLITICS/ Lecture, Discussion**

Approaches the pitfalls and rewards of comparative analysis from three directions. First, we concentrate on two countries' politics each term: Britain and Mexico, and France and Canada in alternate years. We look also at specific political issues such as housing, racism, and police control. Open to majors and nonmajors.

Ms. Enloe

Offered every year

112 COMPARATIVE AUTHORITARIAN SYSTEMS/ Lecture, Discussion

Focuses on the most conspicuous political fact of modern times—authoritarianism. Through a comparative study of several authoritarian regimes, the course seeks to understand the dynamics of modern authoritarianism: its inception and structure, its transitional or permanent nature, and its distinct variations. The course first examines prevalent historical examples (e.g., Hitler's Germany or Franco's Spain) and then selects contemporary case studies from Europe, Latin America, and the Middle East.

Ms. Sochor

Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE/ Lecture, Discussion

Analyzes the concept, the causes, and the process of revolution. Distinctions are made between revolution and other forms of political violence

such as terrorism, rebellion, and coups. The course examines theories of revolution as well as specific case studies. The Russian and Chinese revolutions are studied as twentieth-century prototypes; comparisons are then drawn to recent revolutions in the Middle East and Latin America.

Ms. Sochor

Offered every other year

179 COMPARATIVE FOREIGN POLICY

Explores the factors that influence the formulation and execution of foreign policy. Attention is accorded to the international setting of foreign policy making as well as to the domestic sources of foreign policy behavior. Comparisons and contrasts are drawn among several countries in order to gain insight into the range of foreign policy options, constraints, and strategies. Particular attention is given to European and Soviet foreign policy.

Ms. Sochor

Offered every other year

182 COMPARATIVE EUROPEAN POLITICAL SYSTEMS/ Lecture, Discussion

A comparative study of the major west European political systems. Study of the political historic development will lay the basis for comparison of modern functions of government. Stress is placed on systemic analysis and its importance for comparative politics.

Mr. Rasmussen

Offered every year

208 COMPARATIVE POLITICS OF WOMEN/ Lecture, Discussion

Examines the roles, priorities, strategies, and theories of women in Britain, the Soviet Union and one Third World country. Causes for changes—and lack of genuine changes—in women's political status are investigated to shed new light on those countries' political systems (politics of development, revolution, sexuality, labor, and the family are discussed). At least one previous course in government or women's studies is strongly advised.

Ms. Enloe

Offered every year

222 STRATEGIES OF DEVELOPMENT AND CHANGE IN COMMUNIST POLITICAL SYSTEMS/ Lecture, Discussion

Examines the relationship between ideology, political power, and levels of economic development in the formulation of communist political systems. The course poses the central question: How do communist political leaders attempt to achieve the dual goals of development and socialist transformation? Begins with a brief examination of the Soviet Union as a prototype of a communist political system. How successfully did the Soviet Union promote the transition to socialism? For answers, this course looks at subsequent revolutions in Eastern Europe, China and Cuba to determine their adherence to, or rejection of, the Soviet model. What alternative strategies of development have evolved? We also examine the sources of change and limits to change in communist political systems.

Ms. Sochor

Offered every other year

228 COMPARATIVE POLITICS OF RACE AND ETHNICITY/ Lecture, Discussion

Explores the politics of "ethnicity" and "race" for groups as different as American Blacks, South African Afrikaners, Soviet Muslims, and French Canadians in the politics of industrialized and Third World political systems. The political interactions of sex, race, and class and state power are

analyzed. Some previous study of international development, comparative politics, history, or sociology would be very useful.

Ms. Enloe

Offered every other year

235 COMPARATIVE BUREAUCRATIC POLITICS/ Lecture, Discussion

In both industrialized and developing nations, bureaucrats and their agencies have been of critical importance to policy making and implementation. This course uses cases from Europe, Africa, and Asia to explore when bureaucrats are strong and when they are weak, and why it matters to ordinary citizens and elites.

Ms. Enloe

Offered every other year

236 POLITICS OF SOUTHEAST ASIA/ Lecture, Discussion

Analyzes the changes, or blockage of changes, that have occurred in the area since 1945. Peasant politics, nationalism, foreign investment, the military and ethnic politics are discussed. All countries are discussed but special focus is on the Philippines and Vietnam.

Ms. Enloe

Offered every other year

237 POLITICS OF SCANDINAVIA/ Lecture, Discussion

Analyzes twentieth-century political thinking with specific reference to Scandinavian thought and political systems. The examination is of major trends as they constitute unique Scandinavian developments or reflect a broader European pattern of thinking.

Mr. Rasmussen

Offered every other year

251 COMPARATIVE REVOLUTIONS

Refer to course description under History 251.

Mr. Lucas

256 GOVERNMENT AND POLITICS OF THE SOVIET UNION/ Lecture, Discussion

Examines key factors in the formation and evolution of the Soviet political system. The first part of the course reviews critical junctures in Soviet political history; the second part focuses on the operation of the contemporary Soviet system. Particular attention is paid to the domestic and international challenges facing Soviet political leaders, the resources at hand, and the institutional framework for arriving at political solutions.

Ms. Sochor

Offered every year

261 WOMEN AND MILITARIZATION IN A COMPARATIVE POLITICS PERSPECTIVE/ Lecture, Discussion

Examines the analytical proposition that the process by which any country's military grows in influence is shaped by its ideas about "masculinity" and "femininity." We explore questions such as: What do women's own experiences in wartime and peacetime reveal about military politics? What do we newly reveal about militaries when we analyze governments' policies to use women as mothers, wives, workers, prostitutes? Do cultural and economic differences shape the military sexual division of labor? Countries such as Britain, Thailand, Philippines, and the U.S. are discussed. Previous government or women's studies courses are desirable. Limited to juniors and seniors.

Ms. Enloe

Offered every other year

262 COMPARATIVE POLITICS OF WOMEN AND LABOR/ Seminar

Women's studies has made the very meaning of "labor" more complex. We explore the relationship between paid and unpaid labor, political alliance and ideologies. The experiences of white women and women of color in the U.S., Canada, Europe, Africa, and Latin America are explored. Previous courses in women's studies or comparative politics would be useful. Limited to juniors, seniors, and graduate students.

Ms. Enloe

Offered every other year

265 POLITICS OF JAPAN/ Lecture, Discussion

Japan is considered one of the world's four great powers. Yet its domestic political dynamics are not widely understood by Americans. This course explores the major factors that have shaped Japanese politics and government policies since 1945. Among the topics to be analyzed are: the group loyalties of Japanese, the factional rivalries within major parties, the influence of bureaucrats, the role of women and business in politics. The course is open to majors and nonmajors.

Ms. Enloe

Offered every other year

266 ETHNOLOGY AND POLITICS OF THE CARIBBEAN

Refer to course description under Sociology 220. Also listed for credit as International Development 266.

Mr. Gerber, Mr. Rasmussen

Offered every other year

280 SOVIET FOREIGN POLICY/ Lecture, Discussion

Provides an overview of Soviet foreign policy, identifies underlying trends and motivating forces, and examines areas of particular concern for the Soviet leadership. Some of the questions posed in the class include the following: Is Soviet foreign policy somehow unique because of its revolutionary origins and its Marxist ideology? How do economic factors influence foreign policy? Why has there been a large Soviet military build-up? Does detente have a future?

Ms. Sochor

Offered every other year

PUBLIC POLICY AND ADMINISTRATION**109 INTRODUCTION TO PUBLIC POLICY AND ADMINISTRATION/ Lecture, Discussion**

Focuses on the administrative dimension of the public policy making and policy implementation process. The course describes the environmental setting of American public administration, describes selected problems and perspectives in public administration, explicates the historical and philosophical context of administrative action, reviews the procedural and institutional networks in the administrative process, and presents selected frameworks utilized for organizing the technical dimension of the policy process. Prerequisite: Government 150 or permission of instructor.

Mr. Cook

Offered every year

157 THE POLITICS OF ENVIRONMENTAL ISSUES/ Lecture, Discussion

Intended to provide the student with a basic understanding of environmental issues. The course considers the sources of environmental problems, how issues arise, how policies have been formulated, and what effects the policies have had. The general topics covered include the physi-

cal nature of pollution problems, the social and political dynamics of pollution problems, environmental politics in Congress, and environmental regulation and its reform.

Mr. Cook

Offered every other year

213 POLICY ANALYSIS/ Lecture, Discussion

Policy analysis is a means of critically examining public programs to provide decision makers with information with which to make policy decisions. Policy analysts use a variety of techniques, such as evaluation research, program budgeting, and survey research. In times of financial and political crises, when governments must make critical choices, the work of the policy analyst is crucial. This course examines (1) the purpose and context of policy analysis, (2) the various methods that are used and (3) the implementation requirements and constraints involved in applied policy research. Both theoretical and applied case materials are used in this course.

Mr. Cook

Offered every year

221 SEMINAR: PUBLIC POLICIES AND AMERICAN CITIES

Refer to course description under American politics courses.

Staff

233 GEOGRAPHY OF PUBLIC SERVICES

Refer to course description under Geography 233.

Staff

247 SELECTED PROBLEMS IN PUBLIC POLICY/ Lecture, Discussion

An in-depth analysis of current public policy controversies is undertaken using various tools of policy analysis. Topics for analysis are likely to come from areas such as environmental policy and pollution control, urban policy and metropolitan development, and economic policy and control of the economy. Prerequisite: Government 107 and 50 or Government 213 or permission of the instructor.

Mr. Cook

Offered every other year

269 PUBLIC POLICY AND MACHIAVELLI REVISITED/ Lecture, Discussion

An in-depth analysis of Machiavelli's political theory and approach to policy making. The course differentiates between normative theory and objective analysis. In the process, themes developed by Machiavelli are applied to current policy formation and models for public policy analysis.

Mr. Rasmussen

Offered every other year

271 POLITICS AND ECONOMIC POLICY/ Lecture, Discussion

Examines economic policies that have been produced by the American political system during the New Deal and Post New Deal periods. Examines fiscal and monetary policies, efforts to moderate prices, and employment policies not merely in terms of their technical standing in economic theory but equally in terms of the working assumptions made by the political elite and the public.

Staff

Offered every other year

282 SEMINAR ON HOUSING POLICIES

Refer to course description under American Politics courses.

298 PUBLIC CHOICE THEORY/ Lecture, Discussion

Reviews some important recent political theories that make use of economic concepts in attempting to explain political phenomena. Emphasis is placed on evaluating the theory in terms of its success in accounting for established empirical propositions as well as its prescriptive uses and normative implications. Some of the subjects covered are theories of representative government, a theory of the organization and formation of groups, theories of voting systems, and a theory of bureaucratic behavior.

Mr. Blydenburgh

Offered every other year

Note: For additional public administration courses, students should also check courses offered through COPACE each semester.

Hebrew

See Department of Foreign Languages and Literatures.

History

DEPARTMENT FACULTY

Paul S. Ropp, Ph.D., *chair*: Asian history, comparative history

George A. Billias, Ph.D.: colonial American history, comparative history, military history

Daniel R. Borg, Ph.D.: modern German history, modern European history, political history

Richard B. Ford, Ph.D.: African history, resource management, international development

Ronald P. Formisano, Ph.D.: U.S. political & social history, nineteenth century and since 1945; social movements; community power; historical method

Tamara K. Hareven, Ph.D.: social history, urban history, history of the family, history of the life course and aging, nineteenth- and twentieth-century U.S. history

Douglas J. Little, Ph.D.: U.S. diplomatic history, America since 1900, modern Latin America

Paul Lucas, Ph.D.: Western civilization; Europe, especially England and France, 1500-1800; European intellectual history, 1650-1945

AFFILIATED AND ADJUNCT FACULTY

Douglas M. Astolfi, Ph.D.

Thomas C. Barrow, Ph.D.

Paul F. Burke Jr., Ph.D.

Stuart W. Campbell, Ph.D.

William A. Koelsch, Ph.D.

Marcus A. McCorison, M.S.

Barbara Geller Nathanson, Ph.D.

Richard P. Traina, Ph.D.

EMERITI

Robert F. Campbell, Ph.D.

Dwight E. Lee, Ph.D.

Theodore H. Von Laue, Ph.D.

UNDERGRADUATE PROGRAM

Despite Henry Ford's famous dictum that "history is more or less bunk," the study of the past provides fresh insights into the present and can even suggest the emerging contours of the future. Clark's History Department seeks to do both by bringing the past alive through nontraditional and interdisciplinary courses that emphasize trends and ideas rather than names and dates. Whether you are interested in colonial America or modern Africa, in family history or international relations, a careful look at yesterday may indicate what tomorrow holds in store.

Students choose a history major for different reasons. Those preparing for careers in government, law, and sometimes business choose the major for the opportunity it offers in gaining insight into the diversity of human affairs. They desire a humanistic study geared toward a practical end. Others view the history major as the broadest and most flexible one in which to study their particular interests from a number of perspectives. Some are committed historians before they arrive at Clark. Their counterparts are those who become history majors by a process of elimination. For history majors and nonmajors alike, history provides an insight into their own individual and collective pasts and, therefore, into their own identities. History courses also introduce students to the global dimensions of world civilization by providing an understanding of the historical evolution of other peoples and cultures.

UNDERGRADUATE MAJOR

The Major Requirements

(Seniors in 1984-85 follow the old requirements for the major, which are described in the 1982-84 catalog. Others meet the requirements that follow.)

- A. Students take *nine* history courses and any *four* nonhistory but related courses.
- B. Of the nine history courses,
 - 1) One must be in one of the following four concentrations that you choose as the base for your major:
 - a) In American history,
 - History 110, *Introduction to History and American Studies*
 - History 116, *Race and Ethnicity in American History*
 - History 120, *America and the World*
 - History 130, *Freshman Colloquium in American History*
 - History 135, *U.S. Social History—1850 to Present*
 - b) In European history,
 - History 130, *Freshman Colloquium in European History* (if designated an introductory course for the major)
 - History 170, *Our European Roots*
 - History 171, *Our European Roots*
 - c) In global history (non-U.S. and non-European)
 - History 130, *Freshman Colloquium in Global History*
 - History 177, *Latin America Since 1825*
 - History 179, *Traditional Africa*
 - History 180, *Modern Africa*
 - History 181, *Traditional China*
 - History 182, *Modern China*
 - History 190, *Survey of Twentieth-Century Global History*
 - d) In other concentrations, such as
 - 1) Jewish studies
 - History 173, *Introduction to the History and Culture of Ancient Israel*

History 174, *The Jewish Experience*

2) International Development

History 125, *Development Problems*

3) Women's studies, Black studies, other thematic studies of various types or self-designed concentrations. See the department chair.

4) Predesigned structured concentrations (American studies and international relations). See relevant sections in this catalog.

- 2) *one* must be a 100-level course outside of your chosen concentration,
- 3) *two* must be 200-level courses within your chosen concentration,
- 4) *two* must be 200-level courses outside of your chosen concentration,
- 4) *two* may be any history courses that you wish to take on any level,
- 6) *one* must be a capstone course, usually taken in the senior year. Your capstone course should be either the departmental capstone seminar (History 295) or a course selected from one of the following: History 204, 293, 296, 297, or 298. In addition, proseminars in your area of concentration may be substituted as a capstone, with permission from the department chair. For honors majors, thesis research is considered to be the equivalent of a capstone course.

THE HONORS PROGRAM

The honors program is designed to provide a challenging set of advanced courses for outstanding history majors. This program is valuable not only for would-be professional historians, but also for those who intend to pursue a career, such as law, that requires excellent analytical and writing skills.

In the honors program, students must meet the general requirements for the major, choose a concentration, and earn four honors credits as part of, or in some cases in addition to, the nine required history courses. More specifically, honors students should take History 292 (*Honors Proseminar*) in their sophomore or junior year. During their senior year, honors students write a research thesis on a topic in their concentration (two course credits) and then take a comprehensive examination on their concentration after completing a one-credit reading course their last spring at Clark. (A brochure on the honors program is available in the History Department Office.) If you meet the general requirements for the major, your transcript will state that you majored in history. If you successfully complete the honors program, your transcript will state that you majored in history with honors.

GRADUATE PROGRAM

The areas of graduate study at Clark are American history and modern European history, with select Third World historical themes as supporting fields. Emphasis is placed on American history because of the department's affiliation with the American Antiquarian Society, which provides graduate students with the facilities of one of the country's finest research libraries, with over 750,000 volumes and many valuable manuscripts relating to early American history prior to 1876. A dozen smaller libraries in Worcester, with combined holdings of more than one million volumes, further extend the resources of the Clark library, as does easy access to Boston, Providence, and New Haven area research facilities.

The department offers graduate work in the form of reading seminars (colloquia), research seminars, and individual tutorials for both reading and research purposes. First- and second-year students take three courses each semester; one of these courses must be expressly devoted to research

for the purpose of producing a substantial research paper. Beyond their research seminar, students fill out their program by taking colloquia, additional research seminars, and upper-division undergraduate courses. The department chair assigns incoming graduate students to faculty advisers, who help design student programs. With the permission of the adviser, a student is encouraged to take suitable courses in other departments or colleges in the Worcester Consortium.

MASTER OF ARTS

The department enrolls master's candidates and awards the degree to students who have: completed eight courses and a one-year residence requirement; either submitted two substantial research papers prepared in two seminars, which are jointly equivalent of the master's thesis, or submitted a master's thesis; and passed the required oral examination. (The department now admits part-time M.A. students, whose residency requirement is defined in terms of courses taken.)

Ph.D. candidates who have passed their preliminary examination (whether or not they will continue with a dissertation) may also receive the degree of Master of Arts.

CERTIFICATE OF ADVANCED GRADUATE STUDY (C.A.G.S.) IN INTERDISCIPLINARY STUDIES

In cooperation with the English Department and the Department of Foreign Languages and Literatures, the History Department sponsors an interdisciplinary C.A.G.S. Students, who have already earned the master's degree, take eight courses that focus their area of interest. A brochure is available in the office of the History Department.

DOCTOR OF PHILOSOPHY

The traditional doctoral program is designed to enable students to master the discipline of history through research, reading, and teaching. In addition to meeting the seminar and course requirements outlined above, a student who enters without an M.A. degree must ordinarily spend at least three years in full-time residence at Clark, satisfy the language requirement, gain some experience in college teaching, pass the preliminary examination, and write a doctoral dissertation within seven years of matriculation. (In recent years the department has also admitted part-time Ph.D. students; their residency is defined in terms of courses taken.)

Language Requirement: Students concentrating in American and British history must pass an examination in one foreign language: French, German, Spanish, or Russian. Students concentrating in American history may substitute a program in quantitative techniques or computer science for a foreign language. Those specializing in European history must pass examinations in two foreign languages, normally French and German. The department chair designates an examiner in each language, who determines if the student is proficient enough to use the language as a research tool. An entering student must take a language examination as soon as it is offered in the first semester of residence and must have passed this examination by the end of the first calendar year of residence in order to register for the second year. If required, the second language examination should be attempted early in the second year and must be completed before the student registers for the third year. All language requirements must be satisfied before the preliminary oral examination can be scheduled.

Teaching Experience: Some teaching experience at the college level is a

prerequisite for the Ph.D. degree. Students normally meet this requirement in their second or third years as teaching assistants.

Fields: Soon after arriving at Clark, each student, in cooperation with his/her adviser, defines four fields and prepares for them in whatever ways seem appropriate in view of her/his background and interests. Students specializing in American history normally offer the full scope of American history as two fields. Those concentrating in non-American history normally offer one American field. (The dividing line between the two American fields generally falls at 1815.) Any student may offer a nonhistorical subject as a field, usually within the social sciences, or prepare an interdisciplinary field.

Preliminary Examination: One of the four fields must be offered for oral examination at the end of the student's first year. Prior to taking the oral, the student must submit two research papers completed in the first year. The remaining three fields will be examined, again orally, at the beginning of the student's third year. The combined oral examinations constitute the "preliminary examination" required by the Graduate Board. Students who have passed their preliminary examinations may, upon request, receive the master of arts.

Dissertation: Students are advised to consider and explore dissertation topics during their years of residence and to choose a possible dissertation adviser as soon as possible. The process of writing a dissertation is outlined in a brochure, *Dissertation S.O.P.*, which may be obtained from the department secretary.

Deadline for Completion: All work required for the doctor's degree must be completed within a seven-year period after matriculation. In unusual circumstances only, such as part-time study or extended illness, the department may grant a specified extension of time.

COURSES

NOTE: Undergraduate courses are of two types: (1) courses designed for freshmen and sophomores and numbered 100-199, and (2) advanced courses numbered 200-299. The latter carry no prerequisite (unless specifically noted) and are open to freshmen and sophomores as well as upper-class students without permission of the instructor. In case of doubt, students should consult their instructors. The term *proseminar* indicates courses of limited enrollment that combine reading, discussion, and written reports. The term *seminar* indicates a research course.

U.S. HISTORY

110 INTRODUCTION TO HISTORY AND AMERICAN STUDIES/

Lecture, Discussion

Introduces basic problems of historical method and interdisciplinary study as revealed in American history. The nature of history, and the individual student's connection with American social history, are examined through autobiography, family history, historical fiction, and traditional historical texts. Emphasis is placed on reading, discussion, and writing one's own family history.

Mr. Formisano, Mr. Ford

Offered every year

116 RACE AND ETHNICITY IN AMERICAN HISTORY/ Lecture, Discussion

Explores the influence that racial and ethnic patterns have had upon the whole course of American history. In terms of race, it analyzes the impact that red, white, and black peoples have had upon American history from

colonial times to the 1980s. From an ethnic perspective, the course deals with the beliefs and ideas of different immigrant groups. What it seeks to show is how different immigrant groups affected the changing American environment over time, and conversely how the immigrants themselves were influenced by that dynamic American environment. A midterm, a final, and assigned term papers.

Mr. Billias

Offered every year

120 AMERICA AND THE WORLD/ Lecture, Discussion

This course assumes: 1) that the United States will be a world power in the year 2000 and 2) that we should, therefore, understand America's development within the context of world history. Hence, in chronological terms, the course stresses the period since the turn of the twentieth century, when America first emerged as a world power. Among the course's themes: the expansion of Europe into an Atlantic civilization, the Atlantic revolution, America's industrial development and the rise of an American continental empire, America and the two world wars, America and the rise of the Third World, the rise of multinational corporations, the Cold War, and imperial America as a global power in the 1960s and 1970s.

Mr. Billias, Mr. Little

Offered every year

135 U.S. SOCIAL HISTORY - 1850 TO PRESENT/ Lecture, Discussion

Explores the transformation of American society following industrialization and urbanization from the middle of the nineteenth century to the present. It examines the social structure, migration and immigration, the adaptation of various groups to a complex urban-industrial society. It examines the experience of different ethnic and racial groups, immigrants, and blacks. It pays special attention to family, work, education, social mobility, and labor relations in the context of changing social institutions.

Ms. Hareven

Offered every year

200 AMERICA'S FORMATIVE YEARS/ Lecture, Discussion

The basic institutions of American civilization and the prevailing attitudes of the present were shaped in large measure during the colonial era. This course deals with the foundations of such institutions as the family, church, and local community in America as well as the development of representative political institutions. Includes examination of American attitudes toward race, religion, class distinctions, cultural ethnocentrism, and imperial relations with the mother country during the same period. The aim is to analyze the reasons for two major tendencies that seemed to develop in the American colonies: the erosion of traditional European attitudes toward authority and the emergence of a psychology of accommodation resulting from the pressures arising from the increasingly pluralistic character of the population.

Mr. Billias

Offered every other year

201 ERA OF THE AMERICAN REVOLUTION/ Lecture, Discussion

An analysis of American society in the prerevolutionary period with particular emphasis upon the ideological and political developments that led to the War of Independence.

Mr. Billias

Offered every other year

202 U.S. CONSTITUTION TO AMERICA'S SECOND WAR OF INDEPENDENCE/ Lecture, Discussion

An analysis of the American revolutionary experience, political theories in the making of the federal Constitution, problems of the new government,

and developments in the American political tradition through the Jeffersonian and Madisonian eras.

Mr. Billias

Offered every other year

204 INTERPRETATIONS OF AMERICAN HISTORY/ Colloquium

An undergraduate-graduate course; undergraduates may enter with the permission of instructor. (See course description under History 304.)

Staff

Offered every other year

206 NINETEENTH CENTURY U.S. POLITICAL HISTORY/ Lecture, Discussion

An introduction dealing with the emergence of political parties, the Civil War and Reconstruction, the Gilded Age, third parties, Populism, and social movements, within a perspective emphasizing the shaping of modern American politics.

Mr. Formisano

Offered every other year

208 THE U.S., 1900-1945/ Lecture, Discussion

A survey of the U.S. from the progressive era through World War II. The course emphasizes the emergence of modern American culture, the rise of an imperial presidency, and the growth of government intervention in the economy from Teddy Roosevelt to Franklin Roosevelt. Topics include the decline of socialism, the impact of war on American society, and the persistence of racial and ethnic conflict.

Mr. Little

Offered every other year

209 THE U.S. SINCE 1945/ Lecture

A survey of U.S. political, social, and cultural history from Hiroshima to Watergate. The course focuses on the growth of an affluent society, the emergence of an imperial foreign policy, and the rise of the military-industrial complex. Major topics include anticommunism at home and abroad, the impact of the mass media on postwar American culture, the civil rights revolution, the Vietnamese War, and the continuing impact of "the sixties."

Mr. Formisano

Offered every year

212 U.S. URBAN HISTORY/ Lecture, Discussion

Examines major themes in the social and cultural development of American urban society from colonial origins to the present. It focuses on the process of urbanization and on the adaptation to urban life in relation to changing social conditions.

Ms. Hareven

Offered every year

217 AMERICAN FAMILY IN HISTORICAL PERSPECTIVE/ Proseminar

Explores historical changes in the family kinship and generational relations in American society with cross-cultural comparisons. It examines the relationship between industrialization and family behavior, the interaction between the family and other institutions (education, work, welfare), and historical changes in the life cycle. Limited to juniors, seniors, and graduate students. Opportunity for research papers.

Ms. Hareven

Offered every year

218 AGING AND THE LIFE COURSE IN AMERICAN SOCIETY/ Proseminar

Examines the historical changes in the life cycle in American society as they have affected the relations among different age groups and especially

the status of older people. It explores the emergence and recognition of different stages of life (childhood, adolescence, youth, middle age, old age) in a changing cultural and social context. Limited to seniors and graduate students. Opportunity for research papers.

Ms. Hareven

Offered every other year

219 HISTORY OF AMERICAN WOMEN

Staff

Offered periodically

220 INDUSTRIALIZATION IN COMPARATIVE PERSPECTIVE/

Proseminar

Examines the process of industrialization and its social consequences. Focuses on the countries that industrialized first—England, the U.S. and parts of Western Europe—and compares them with countries that have industrialized in the twentieth century (Japan), and with those going through the process today. Examines aspects such as changes in organization of work, the division of labor, emergence of an “industrial culture,” changes in status of workers and labor relations, demographic changes, and the transformation of the family and its economy. Limited to juniors, seniors, and graduate students. Opportunity for research papers.

Ms. Hareven

Offered every other year

221 AFRICAN/AMERICAN HISTORY

Staff

Offered periodically

225 RACE, CLASS, ETHNICITY IN THE 1960s AND 1970s: BUSING IN BOSTON/ Discussion

The desegregation controversy in Boston is understood by examining the historical and contemporary background of ethnic, class, and race conflicts, educational history, and legal-constitutional issues. Themes and materials range beyond Boston.

Mr. Formisano

Offered periodically

228 RIGHT-WING MOVEMENTS, 1790-1970

Examines Wallace, McCarthyism, American fascism, social justice, the red scare, A.P.A., the know-nothings, antimasons, anti-illuminati, and other movements. Prerequisite: permission of instructor.

Mr. Formisano

Offered periodically

229 U.S. ELECTIONS AND PARTIES 1789-1984/ Lecture, Discussion

Abroad survey of American politics from the early national period to the elections of 1980 and 1984. Shifting voter coalitions, social movements, and social group behavior are emphasized, as well as different political systems and cultures from the past to the present.

Mr. Formisano

Offered periodically

230 RISE OF POLITICAL PARTIES IN THE EARLY AMERICAN REPUBLIC/ Seminar

An undergraduate-graduate course; undergraduates may enter with the permission of instructor. (See course description under History 330.)

Mr. Billias

Offered every other year

234 HEALTH AND DISEASE IN THE AMERICAN HABITAT

Refer to course description under Geography 234.

Mr. Koelsch

237 U.S. FOREIGN RELATIONS TO 1914/ Lecture, Discussion

Studies the creation of an American continental empire from the Revolution to the Spanish-American War. The course emphasizes the role of the main policy makers (Franklin through McKinley) in shaping American territorial and commercial expansion. Major themes include diplomacy and the making of the U.S. Constitution, the influence of sectional conflict on antebellum foreign policy, and the economic aspects of American expansion after the Civil War.

Mr. Little

Offered every other year

238 U.S. FOREIGN RELATIONS SINCE 1914/ Lecture, Discussion

Students examine the emergence of the U.S. as a major world power in the twentieth century. The course focuses on the domestic sources of foreign policy and the assumptions of the major policy makers (Wilson through Reagan). Important themes include the American response to a revolutionary world since 1910, the increasingly dominant role of the president in the making of U.S. foreign policy, and the changing position of the U.S. in the international economy.

Mr. Little

Offered every year

240 AMERICAN CULTURE AND SOCIETY 1820-1860

Refer to course description under English 240.

Mr. Conron, Staff

241 AMERICAN THOUGHT AND CULTURE SINCE 1860

Refer to course description under English 241.

Mr. Conron, Staff

242 POWER IN AMERICAN COMMUNITIES/ Discussion, Research

This undergraduate research seminar introduces students to the basic political science and historical literature concerning power in American cities. Students then do research papers on contemporary or historical power and influence in Worcester.

Mr. Formisano

Offered every year

243 AMERICAN ANTIQUARIAN SOCIETY SEMINAR IN AMERICAN STUDIES/ Seminar

Given at the A.A.S. (about two miles from Clark), affords students an opportunity to do original research in the society's unique holdings. Students should apply in the spring through Mr. Conron (English Department) or Mr. Formisano.

A.A.S. Staff

Offered every year

244 WAGING WORLD WAR II: WAR AND SOCIETY IN AMERICA/ Lecture, Discussion

War is viewed as an extension of the social organization of a given society; the underlying premise of the course is that one can learn a great deal about a society by analyzing the way in which it wages war. A comparative history approach, with stress on the commonalities experienced by the major warring societies — the United States, Britain, France, Russia, China, Germany, Italy, and Japan. The focus is on the centralized bureaucratic states and their standing military forces; the relationship between social, political, and military forces; and the relationship between social, political, and military structures.

Mr. Billias

Offered every year

246 CLARK IN HISTORICAL PERSPECTIVE/ Seminar

After several weeks of common reading on the role of higher education in American culture—emphasizing the rise, character, and impact of the American university—members of the seminar work intensively with archival material on Clark-related topics of interest to them.

Mr. Koelsch

Offered every other year

247 AMERICAN SCIENCE SINCE 1890/ Seminar

During the first half-semester, students read and discuss selected recent writings in the social and intellectual histories of seven sciences: physics, chemistry, biology, geology, meteorology/climatology, anthropology, and geography, in the period since the beginnings of Clark. During the second half, seminar members work on research papers in specific areas of one of those sciences.

Mr. Koelsch

Offered every other year

285 THE MULTINATIONAL CORPORATION/ Proseminar

Considers the growth and development of the multinational corporation from the late nineteenth century through the 1970s. The course examines why multinationals expand abroad, how they affect the host country, and in what manner they influence U.S. foreign policy. Emphasis on case studies from the oil, mineral, and utilities industries. Prerequisite: permission of instructor.

Mr. Little

Offered every other year

291 ADVANCED TOPICS IN INTERNATIONAL RELATIONS/ Seminar

Substantive content of this course varies with the interests of the instructor. Possible topics include issues in international development, multinational corporations, the new international economic order, or issues in U.S. foreign policy. The course is designed principally for advanced students concentrating in international relations. Other students may be admitted by permission of the instructor.

Mr. Little, Mr. Trachte

Offered every year

EUROPEAN HISTORY

121 INTRODUCTION TO GREEK CULTURE, ART, AND ARCHAEOLOGY

Refer to course description under Classics 121.

Mr. Burke

130.3 ORWELL'S 1984 AND TWENTIETH-CENTURY EUROPE/ Discussion, Lecture

Readings, discussions, and short papers, using utopian novels, social commentaries, and lectures to focus on the course and prospects of modern European society. Not an introductory course for the major.

Mr. Borg

Offered every year

150 NARRATIVE IN ANCIENT HISTORICAL WRITING

Refer to course description under Classics 150.

Mr. Burke

170 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE "FALL" OF ROME THROUGH THE RENAISSANCE AND REFORMATION/ Lecture

Principal goal is to familiarize students from all disciplines with the basic outlines of the developments of Western society and, therefore, the character of our collective identity. For the would-be history major, a secondary goal is the presentation of varieties of historical "angles"—cultural, political and military, economic and social—and the integration of these analytical approaches into a coherent, popular narrative. The medieval period is emphasized because our modern history is rooted in it. Students are advised to take both History 170 and 171 since they are parts of a whole, but either course may be taken without the other. Two exams, one short paper, final exam.

Mr. Lucas

Offered every year

171 OUR EUROPEAN ROOTS: WESTERN CIVILIZATION FROM THE SEVENTEENTH CENTURY TO THE PRESENT/ Lecture

Goal is the same as History 170. Course begins with the scientific revolution of the seventeenth century and the Enlightenment of the eighteenth century and concludes with an examination of our contemporary spiritual, material, and institutional existence in the light of our past development. Students are advised to take both History 170 and 171 since they are parts of a whole, but either course may be taken without the other. Two exams, one short paper, final exam.

Mr. Lucas

Offered every year

250 THE FORMATION OF THE MODERN STATE: GROUP CONSCIOUSNESS, INDIVIDUALISM, AND SOCIAL ORGANIZATION IN "OLD EUROPE," 1550-1789/ Lecture, Discussion

An examination of pre-French Revolutionary Europe as a corporative and customary political culture; a study of how that culture was altered by militarism, absolutism, mercantilism, early capitalism, modern science, and the requirements of the international system of European states; an appreciation of the social and ideological legacies of the ancien regime in our own time. Six two-page papers, take-home final exam, class participation.

Mr. Lucas

Offered every other year

251 THE COMPARATIVE STUDY OF REVOLUTIONS: THE FRENCH REVOLUTION OF 1789 AND THE BEGINNINGS OF MODERN REVOLUTIONS/ Lecture, Discussion

An analysis of old and new ideas of revolution including ritual, resistance, reactionary restoration vs. innovation; the "democratic" revolution; the psychology, sociology, and social psychology of revolutionary behavior; religion and revolution; violence; and the relevance of the French Revolution to twentieth-century issues. One long paper, final examination, class participation.

Mr. Lucas

Offered every other year

252 NINETEENTH-CENTURY EUROPE/ Lecture, Discussion

Centers around the problems and dilemmas of various European political societies as they responded to the tug of modernity during the century of European preeminence throughout the world.

Mr. Borg

Offered every other year

253 TWENTIETH-CENTURY EUROPE/ Lecture, Discussion

Concentrates on the characteristic problems of Europe in a century of war, economic convulsion, and political instability.

Mr. Borg

Offered every year

257 EUROPE SINCE 1945/ Proseminar

Readings and discussions in modern Europe since the second world war.

Mr. Borg

Offered every year

258 ENGLAND'S "OLD REGIME"/ Lecture, Discussion

Examines the formation of the peculiarities of the English "character," state, society, religions, and the world's first modern industrial economy, 1500-1850. To help students grasp these peculiarities, a special emphasis is placed on comparisons of England's experience with continental Europe's and on the use of historical psychology.

Mr. Lucas

Offered every other year

259 MODERN GERMANY/ Lecture, Discussion

Offers an examination of the convulsive course of German history over the past century.

Mr. Borg

Offered every other year

260 MODERN SPAIN AND THE CIVIL WAR/ Lecture, Discussion

A study of the history of twentieth-century Spain with emphasis on the origins and the implications of the Spanish Civil War. The course examines the political and economic modernization of Spain from 1898 through the Franco regime. Topics include the development of a republican tradition, the rise of the revolutionary left, and the role of the army in Spanish politics.

Mr. Little

Offered periodically

264 REVOLUTIONARY RUSSIA, 1900-1924/ Lecture, Discussion

Central themes are: (1) the collapse of the tsarist regime and the rise of Soviet power and (2) the transformation of a social revolution into an unprecedented experiment of mobilizing a backward empire for global power. For the human dimension of this historic drama, students read Pasternak and Sholokhov and write a short paper on each.

Mr. Von Laue

Offered every other year

271 IN SEARCH OF HUMANITY: EIGHTEENTH-CENTURY EUROPEAN VALUES/ Lecture, Discussion

The Enlightenment and its heirs and critics: the scientific revolution, philosophical reformism, and early conservative romanticism. Emphasis on rival perceptions of man's psychological and social nature, history, and aesthetic and religious sensibilities as seen through great secondary treatments of the Enlightenment (which also introduce the student to various ways of doing intellectual history) and original sources: Hume, Beccaria, Rousseau, Condorcet, Kant, Burke, Savigny. Four two-page papers, final examination, class participation.

Mr. Lucas

Offered every other year

272 IN SEARCH OF HUMANITY: NINETEENTH-CENTURY EUROPEAN VALUES/ Lecture, Discussion

The elaboration of the Enlightenment by its heirs and critics. Emphasis same as in 271, but focus shifts to an analysis of political and economic

liberalism, social Darwinism, racism, and "utopian" socialism in England and France followed by an analysis of nationalism, Marxism, positivism, old and new conservatisms, and the reassessment of the values and progress of European civilization among principally Italian and German thinkers. Approximately four two-page papers; final examination, class participation.

Mr. Lucas

Offered every other year

JEWISH HISTORY

140 THE JEWISH MYSTICAL TRADITION

Refer to course description under Hebrew 140.

Mr. Waldoks

Offered every other year

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics 160.

Mr. Burke

Offered every other year

173 INTRODUCTION TO THE HISTORY AND CULTURE OF ANCIENT ISRAEL/ Lecture, Discussion

An introduction to ancient Israel as revealed by the contents and character of the Hebrew Bible/Old Testament, archaeological data, and non-Biblical literary and archaeological material from ancient Mesopotamia and ancient Egypt. Israeli civilization will be studied in the larger context of the ancient Near East. Fulfills historical perspective requirement.

Ms. Nathanson

Offered every other year

174 THE JEWISH EXPERIENCE/ Lecture, Discussion

A survey of the history of the Jewish community and the development of Judaism from the era of Alexander the Great (c. 325 B.C.E.) to the present. This course examines the major political, religious, social and economic trends of each period as they affected the evolving Jewish community and the development of Judaism, and emphasizes elements of change and continuity as well as the interaction of the Jewish community with the larger culture/community. Fulfills historical perspective requirement.

Ms. Nathanson

Offered every year

223 THE AMERICAN JEWISH EXPERIENCE: A HISTORY OF JEWS IN THE UNITED STATES/ Lecture, Discussion

A selected survey of the role of Jews in the United States: The creation of Jewish institutional life; the relation of Jews to their neighbors; the waves of immigration; melting pot vs. ethnicity, assimilation vs. acculturation; the rise of denominations; the emergence of American Jewry in world affairs; American Jewry and the State of Israel; the future of American Judaism.

Mr. Waldoks

Offered every other year

273 WOMEN IN ANTIQUITY/ Lecture, Discussion

A study of the lives of women and the roles of goddesses in the societies of the ancient Near East, ancient Israel, Greece, Rome, the early Christian community, and the early rabbinic community. Attention is given to the depictions of women and goddesses in ancient literary sources and in archaeological material.

Ms. Nathanson

Offered every other year

274 RABBIS, ROMANS, AND RUINS/ Lecture, Discussion

The development of Judaism from the reign of Alexander the Great (c. 325 B.C.E.) to the seventh century C.E. An examination of the constituents of Jewish culture in relation to the major political, social, religious, and economic trends of the Hellenistic world and of late antiquity as revealed by literary and archaeological sources. Special attention is given to the diversity of first-century Judaism and to the emergence of Christianity.

Ms. Nathanson

Offered every other year

276 OUT OF THE GHETTO! THE EMERGENCE OF THE MODERN JEW AND JUDAISM/ Lecture, Discussion

Discusses the emergence of the Jew into modern society after the French Revolution. The political and ideological struggle over emancipation and adjustment are traced through the growth of Jewish denominationalism in Western Europe. The competing ideologies of Jewish nationalism (including those of both Zionist and non-Zionist) character are discussed in the context of Eastern European Jewry and its unique contribution to modern Jewish identity. The course concludes with an examination of the Weimar Republic in Germany (1918-1933) and the independent Polish State (1918-1939).

Mr. Waldoks

Offered every other year

277 HISTORY OF ZIONISM/ Lecture, Discussion

Examines the development of Zionist ideologies and the emergence of Zionism as a political movement in response to the events of nineteenth and twentieth-century Europe and the Middle East. Attention is also paid to the political and social history of the state of Israel and to the Arab-Israeli conflict.

Mr. Waldoks

Offered every other year

278 HOLOCAUST: THE DESTRUCTION OF EUROPEAN JEWRY, 1933-1945/ Lecture, Discussion

Discusses the rise of political anti-Semitism; the place of the Jew in Eastern and Western European Society; the rise of German volkist ideology and its place in the creation of Nazism. Close attention is paid to Jewish and non-Jewish reaction and resistance to Nazism and its policies of mass murder. The historical, philosophical, and theological implications of the Holocaust and its aftermath are reviewed.

Mr. Waldoks

Offered every other year

LATIN AMERICAN HISTORY

177 LATIN AMERICAN HISTORY SINCE 1825/ Lecture, Discussion

A survey of Latin American nations from independence to the present with emphasis on the twentieth century. Major themes include the persistence of neocolonial social and economic structures, the emergence of nationalist and revolutionary movements after 1900, and U.S.-Latin American relations.

Mr. Little

Offered every year

279 LATIN AMERICA—REVOLUTION, REFORM, AND REACTION/ Proseminar

Examines the political and economic development of four Latin American nations—Argentina, Brazil, Chile, and Mexico—during the twentieth cen-

ture. Special emphasis on the populist tradition among workers and peasants, the radicalization of the Roman Catholic church, and the rise of military authoritarianism.

Mr. Little

Offered every other year

AFRICAN HISTORY

179 THE HISTORY OF TRADITIONAL AFRICA

An introduction to the history of Africa south of the Sahara. The course begins with the early civilizations of Kush, Axum, Ghana, Mali, Songhai, Benin, the Zanj, Congo, and Zimbabwe and continue through to the arrival of Europe. Attention is given to eastern, western, and southern Africa. The approach is largely historical and anthropological.

Mr. Ford

Offered every other year

180 HISTORY OF MODERN AFRICA

Introduces students to the major themes of modern African history. Begins with an orientation to precolonial Africa and then considers four main periods: (1) the imperial years (2) the struggle for independence, (3) the 1960s as a decade of independence, and (4) the 1970s as a search for identity and development. Focus is primarily on the years since 1945.

Mr. Ford

Offered every other year

286 CITIES IN AFRICA

Considers historical dimensions of African urbanization with special attention to the spatial and functional role of cities. Agricultural, administrative, political, market, and industrial uses are examined. The impact of urbanization on African cultural values also are examined.

Mr. Ford

Offered every other year

290 DEVELOPMENT PROJECT MANAGEMENT/ Seminar

Refer to course description under International Development 290.

Mr. Ford

ASIAN HISTORY

181 TRADITIONAL CHINA

Focuses on Chinese life, institutions, and culture from the earliest times through the mid-nineteenth century. Creative literature, philosophical writings, and selected primary documents are used to supplement information presented in the textbook and lectures.

Mr. Ropp

Offered periodically

182 MODERN CHINA

Introduces students to events, personalities, and concepts of particular importance for understanding China's history from China's confrontation with the West in the mid-nineteenth century through the present. Readings that present the Chinese view of events will be used to supplement interpretative studies by Western scholars.

Mr. Ropp

Offered periodically

280 ASIAN HISTORY/ Seminar

See History Department chair for description.

Mr. Ropp

Offered periodically

INTERNATIONAL DEVELOPMENT

125 DEVELOPMENT PROBLEMS/ Lecture, Discussion

An introduction to the study of development. The course considers the historical evolution of the concepts of economic growth and development; the nature of development; five alternative approaches to development ranging from conventional theories of capital intensive investment to more radical theories of labor intensive investments; and for a conclusion, an assessment of development policies of governmental and nongovernmental organizations. Historical, geographic, and political considerations will receive special attention.

Ms. Thomas

Offered every year

283 CLIMATE AND HISTORY: AN ANALYSIS OF THE INFLUENCE OF CLIMATE ON HISTORICAL CHANGE/ Lecture, Discussion

An inquiry into the influence climatic patterns have exerted on historical events. The course looks primarily at Africa and the U.S. In Africa, attention focuses on the Sahel over the last eight to ten thousand years, but with special focus on the last two thousand years. In southern Africa, climate and lifestyle of five different population groups are compared with a similar environmental setting in the great plains of North America. Special attention is given to the Turner hypothesis for institutional development on the frontier.

Mr. Ford

Offered periodically

284 CLIMATIC HISTORY AND DEVELOPMENT/ Lecture, Discussion

A series of case studies for development projects in diversified climate settings. Students select two or three climatic world regions in Asia, Africa, or Latin America and consider different development strategies in agriculture, health, light industry, or resettlement in each of these regions. The goal is to determine appropriate development strategies for varied cultural and physical settings.

Mr. Ford

Offered periodically

GENERAL GLOBAL HISTORY

175 INTRODUCTION TO THE HISTORY OF WORLD RELIGIONS/ Lecture, Discussion

A survey of the history and tenets of the major religions of the East and West — Hinduism, Buddhism, Judaism, Christianity, and Islam. A comparative framework also enables the student to become acquainted with basic themes and patterns of the religious dimension of human existence as expressed in these traditions and in others.

Ms. Nathanson

Offered every year

190 SURVEY OF TWENTIETH-CENTURY GLOBAL HISTORY/ Lecture, Discussion

Starting with a brief assessment of the world in 1900, the course offers historical background to the contemporary global order. It is designed to help students view their lives within a worldwide perspective in terms of politics, economics, and culture as well as the human costs and individual resilience shown during the great crises of this century. Students write several essays to integrate class reading, lectures, and discussions.

Mr. Ford

Offered every year

DEPARTMENTAL HONORS**292 HONORS PROSEMINAR**

Attempts to teach students how to write analytical and synthetic research papers and how to write them well. Introduces students to problems of studying history by learning about the aspirations, advantages, and disadvantages of "historicism." Open to sophomores and juniors, to majors and nonmajors, and to honors and nonhonors students. Three papers, each rewritten once, and class participation.

Mr. Lucas

Offered every year

293 HONORS THESIS RESEARCH

Honors students receive up to two credits for thesis research. Honors students preparing for the comprehensive exam receive credit for their reading under History 297. Offered for variable credit.

Staff

Offered every year

SPECIAL PROJECTS**295 CAPSTONE/ Proseminar, Discussion**

Readings and discussions in the history of the idea of history, from Thucydides until the present.

Mr. Borg, Staff

Offered every year

296 PRACTICUM IN THE TEACHING OF HISTORY

Variable credit.

Mr. Ford

297 RESEARCH PROJECTS/ Tutorial

Undergraduates, normally juniors and seniors, may construct an independent research course with an instructor of their choosing. Prerequisite: permission of instructor. Offered for variable credit.

Staff

298 DIRECTED READINGS/ Tutorial

Undergraduates, normally juniors and seniors, may design a directed readings course to consist of a sequence of structured readings on a given topic to be approved and directly supervised by an instructor. Prerequisite: permission of instructor. Offered for variable credit.

Staff

299.9 INTERNSHIP

The student who undertakes an interdisciplinary internship for more than two credits may receive up to two credits in history and the remainder in another department. Prerequisite: permission of instructor and of chair. Offered for variable credit.

Staff

GRADUATE COURSES

301 STUDIES IN EIGHTEENTH-CENTURY AMERICAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Mr. Billias

304 INTERPRETATIONS OF AMERICAN HISTORY/ Colloquium

Takes a historiographical approach to the literature in American history from the beginning of the colonial period until the end of America's second War of Independence.
Staff

Offered every other year

315 STUDIES IN ECONOMIC HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Staff

330 THE ROLE OF THE FEDERAL CONSTITUTION IN AMERICAN HISTORY/ Researchers' Seminar

Designed to trace the impact of American constitutional ideas from two different perspectives: the effect of the Federal Constitution of 1787 on the rest of the world; and the effect of the world on Americans in terms of their changing perceptions and attitudes toward the Constitution as they witnessed their constitutional ideas being used abroad.
Mr. Billias

Offered every other year

331 AMERICAN POLITICAL HISTORY/ Researchers' Seminar

U.S. political history: methods and topics. Concentration is on topics selected by instructor and students, with special attention to interdisciplinary methods and most recent works in political history.
Mr. Formisano

Offered every year

335 STUDIES IN NINETEENTH-CENTURY U.S. HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Staff

336 STUDIES IN AMERICAN CONSTITUTIONAL HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Staff

337 STUDIES IN DIPLOMATIC HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Mr. Little

341 STUDIES IN AMERICAN THOUGHT AND CULTURE/ Tutorial

Independent studies. Offered for variable credit.
Mr. Koelsch, Staff

342 STUDIES IN AMERICAN INTELLECTUAL HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Staff

344 STUDIES IN RECENT AMERICAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.
Mr. Little, Staff

350 STUDIES IN EARLY MODERN EUROPEAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Lucas

351 STUDIES IN EUROPEAN INTELLECTUAL HISTORY/Tutorial

Independent studies. Offered for variable credit. Papers and discussion.

Mr. Lucas

352 STUDIES IN MODERN EUROPEAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Borg

359 STUDIES IN RUSSIAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

380 STUDIES IN AFRICAN HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Mr. Ford

383 STUDIES IN CHINESE HISTORY/ Tutorial

Independent studies. Offered for variable credit.

Staff

395 PRACTICUM IN THE TEACHING OF HISTORY

Offered for variable credit.

Mr. Ford, Staff

399 GRADUATE READINGS

Offered for variable credit.

Staff

400 THESIS RESEARCH

Offered for variable credit.

Staff

Humanistic Studies

PARTICIPATING FACULTY

Albert A. Anderson, Ph.D.: aesthetics, ancient philosophy, metaphysics

Martyn J. Bowden, Ph.D.: cultural humanistic and historical urban-social geography

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, Classical mythology, Classical art and archaeology, ancient history

John Conron, Ph.D.: American literature, American studies, American landscape

Marvin A. D'Lugo, Ph.D.: Hispanic literature and film, narrative theory

Wesley Fuller, M.Mu.: theory, composition, electronic and computer music

Bonnie Lee Grad, Ph.D.: nineteenth- and twentieth-century art

Susan Hanson, Ph.D.: urban-social geography, transportation

Douglas L. Johnson, Ph.D.: cultural ecology, arid lands management

Michael K. Spingler, Ph.D.: French theater and film, comparative drama, translation

James D. Laird, Ph.D.: self attribution, attributions to others, structures of person awareness, world hypotheses as personality variables
Walter Schatzberg, Ph.D.: age of Goethe, German expressionism in literature and the arts, German cinema, relations of literature and science

UNDERGRADUATE PROGRAM

The Program of Humanistic Studies is an interdisciplinary program. Although the program does not offer an undergraduate major, each semester it offers undergraduates a series of integrated seminar courses, or "clusters," each centered around a different theme and exploring the ways in which that theme is approached by investigators from a variety of humanities and social science disciplines. The objective of the cluster approach to interdisciplinary learning is to combine, for both the student and the faculty member, the strengths of a disciplinary grounding in a subject with the benefits of an interdisciplinary focus on themes and methods.

Humanistic education is concerned with the assumptions and methods the human mind has established in certain areas of knowledge, with emphasis on cultural and historical contexts that give rise to that knowledge—an appreciation for the significance of that subject in its contemporary as well as historical dimensions. In short, the learning experience is broadly defined, not as an isolated approach to a narrow kind of knowledge, but rather as modes of learning that continually stress the tradition and contemporary context of knowledge.

Each cluster in the Program of Humanistic Studies consists of a group of three or four course components in different departments and/or disciplines taught concurrently on aspects of a single theme. Although individualized in terms of the particular methodologies used in each course, all courses in a cluster share a number of common features:

1. general theme;
2. a number of shared readings in all courses within a given cluster;
3. some joint sessions in which all courses in the cluster meet to discuss the common theme or work in a common activity;
4. a common number of writing assignments, the evaluation of which will be shared in some measure by all faculty participating in the cluster.

All cluster courses are listed in the individual departments and may be used to fulfill major requirements in appropriate departmental majors.

THEME-CENTERED CLUSTERS

EUROPEAN ROOTS OF AMERICAN SPACE/ Lecture, Discussion

A cluster in the Program of Humanistic Studies, this is an examination of the European images of the known world at the time of the discovery of America, of how these early notions affected later thought about America in the areas of geography, literature, and the arts, and of the succession of American (and European) images of American space to the present. Using literature, film, and other artistic forms, specific models are studied in a variety of contexts: the island, the city, the garden, the frontier, the general contrast between primitive and civilized spaces. Listed for credit as English 172.

Mr. Conron, Mr. Bowden,
Mr. D'Lugo, Mr. Anderson

Offered every other year

AMERICAN LANDSCAPE/ Lecture, Discussion

A cluster course in the Program of Humanistic Studies and the American Studies Concentration. Coordinated courses in art history, cultural geography, and American literature explore common themes in the evolution of the American landscape. These themes include: the values, perceptions, images, material artifacts, and settlement processes that contributed to shaping the humanized landscape. The themes are elaborated in a context both historical and regional. Classes meet twice weekly in separate groups for the regularly scheduled class period. The class period is extended for joint meetings in alternate weeks for special events including lectures, field trips, and possible films. Short written papers marked by participating professors and class participation are the basis for grades. Listed for credit as English 279.

Ms. Grad, Mr. Conron,
Mr. Johnson

Offered every other year

AMERICAN SPORT/ Lecture, Discussion

A cluster course in the Program of Humanistic Studies. Parallel and overlapping courses in cultural geography, economics, and psychology using common readings, writing assignments, and group meetings in an exploration of various American games as expressions and reflections of American history, character, values, attitudes, environment, self-image, mentality, and economic ethos and institutions. Emphases include the relationship between the character and structure of the games and their success among different groups of Americans; explanations for the transformation of the games from European and early forms; economic forces influencing the structure of spectator and participatory sports. Athletics, boxing, cricket, baseball, soccer, rugby, football, basketball, hockey, and tennis, among others, are considered. Classes meet twice weekly in separate groups for the regularly scheduled class period. The second class period is extended for joint meetings in alternate weeks for special events (films, trips). Short written papers marked by participating professors and class participation are the basis for grades. Listed for credit as Geography 196, Economics 196, and Psychology 196. Each course is limited to 20 students.

Mr. Laird, Mr. Puffer,
Mr. Bowden

Offered every other year

END OF AMERICA: LOS ANGELES/ Lecture, Discussion

A cluster course in the Program of Humanistic Studies. The history of Los Angeles—the western end of American space—embodies better than that of any other city the polemic between traditional and technological notions of the city. It provides a unique, possibly the ultimate, model for the examination of the American cultural spirit. An exploration of the changing notions of the city and the American attitude toward the culture of cities through close examination of the history, geography, literature, and film associated with Los Angeles. Listed for credit as Geography 240.

Mr. D'Lugo, Mr. Conron
Mr. Bowden

Offered every other year

ANCIENT CITY/ Lecture, Discussion

A cluster course in the Program of Humanistic Studies. The Greek *polis* (city-state) has played a central role in the development of Western civilization. An exploration of the roots of the Western city, this course examines the various forms that notion takes in literature, theater, philosophy, and visual arts.

Staff

Not offered on a regular basis

CULTURE, SOCIETY AND ECOLOGY/ Lecture, Discussion

A cluster in the Program of Humanistic Studies and a capstone in urban studies and cultural geography. An examination of the meanings of culture, society, and ecology at different spatial scales. Central organizing concepts include primitive, traditional, and modern worlds; stages of economic growth, interaction, and integration; core and periphery; zonation; gradient; ecosystem; rural-urban continuum; and city and country. Listed for credit as Geography 249 (*City, Space, and Culture*) and Geography 243 (*Ecology, Culture, and the City*).

Mr. Turner, Ms. Hanson,

Offered every year

Mr. Bowden

1900: THE MODERN THEME IN EUROPEAN AND AMERICAN CULTURE/ Lecture, Discussion

A cluster in the Program of Humanistic Studies. A consideration of nineteenth-century notions of society and community as reflected in literature and the visual arts and the ways in which these values shaped the twentieth-century views of cultural tradition and social thought. The cluster, focusing on a number of centers of creativity (Paris, Berlin, Madrid, Mexico City, and Buenos Aires), explores patterns of cultural continuity over time and the opposition to traditional values in artistic and social movements of renovation. Each course within the cluster concentrates on a specific city as the site of the emerging modern theme. Joint sessions stress parallel developments of modernism in different cultural areas, the diffusion of certain values from one area to another, and the legacy of modernism in late twentieth-century social and aesthetic thought. Sections in French, German, and Spanish.

Mr. Spingler, Mr. Schatzberg,

Offered every other year

Mr. D'Lugo

International Development and Social Change

PROGRAM FACULTY

Richard B. Ford, Ph.D., *codirector*: African history, resource management and international development

Barbara P. Thomas, Ph.D., *acting codirector*: community organization, women and public policy, rural development

Leonard Berry, Ph.D.: resource management, physical systems, regional planning, rural development, data systems

Robert Bradbury, Ph.D.: health planning, health systems analysis, health administration

Ronald J. Eastman, Ph.D.: geographic information systems, remote sensing and digital image processing, cartographic design and production

Cynthia Enloe, Ph.D.: bureaucratic politics, comparative race and ethnicity, politics of women

Stanford Hagopian-Gerber, Ph.D.: Caribbean politics, migration, family, development of small islands

Perry O. Hanson, Ph.D.: microcomputers and development, research methods, quantitative methods

Sixten Haraldson, Ph.D.: health planning, health education, health delivery systems

Robert C. Hsu, Ph.D.: economic development, comparative economic systems, international economics
 Douglas L. Johnson, Ph.D.: arid land management, cultural ecology, human geography, environment and development
 Gerald J. Karaska, Ph.D.: regional economic development
 Robert W. Kates, Ph.D.: theory of human environment, hazards
 Laurence A. Lewis, Ph.D.: agriculture and the physical environment in the tropics, rural agricultural development, Africa, Caribbean
 David Major, Ph.D.: project evaluation, resource management, water resources development
 Frank Puffer, Ph.D.: regional economics, African economic development, health economics
 Harry E. Schwarz, B.C.E.: resource management with emphasis on water resources, environmental impact of development, water resources planning and management
 Ann Seidman, Ph.D.: regional economics, African development, project analysis
 Zenovia A. Sochor, Ph.D.: Soviet politics, revolutions, Superpowers and the Third World
 Harry J. Steward, Ph.D.: cartography, remote sensing, mapping systems
 Kent Trachte, Ph.D.: international relations, foreign policy, international political economy
 Billie Lee Turner II, Ph.D.: cultural ecology, agriculture

PART-TIME FACULTY

Eileen Berry, Ph.D.: household economic behavior in developing countries, African development, natural resource management

PROGRAM

International Development and Social Change (ID) is an interdisciplinary program with teaching, training, and research components. It offers courses at the B.A. and M.A. levels. It was founded in the mid-nineteen seventies as a cross-disciplinary effort among the Graduate School of Geography, the Environmental Affairs Program, and the Departments of Government, Economics, and History. Subsequently this interdisciplinary approach has been enhanced by the incorporation of anthropology, programmatic collaboration with the Graduate School of Management, and the establishment of the Center for Technology, Environment, and Development (CENTED) of which ID is a founding partner.

The teaching program is designed to introduce students to the complex issues involved in international development, acquaint them with a range of research activities, and prepare them for careers and participation in international fields. It attempts to orient majors to the changing world in which we live and to the increasing role developing societies play in the interdependence of the world's social, economic, and political systems. The program encourages nonmajors to participate in its courses, seminars, or other international development activities. Undergraduates are encouraged to work out a double major with ID and one of the cooperating departments.

Majors are expected to acquire basic skills of economic and social analysis as well as a generalized orientation toward development and social change. These skills and attitudes will be useful for any number of careers in either the private or public sector that deal with developing areas of the world, or for further graduate study and specialization. To attain these skills students in the program work in a combined graduate-undergraduate setting, which blends the breadth of liberal arts with the

specialization of professional training. Thus, the curriculum combines existing departmental courses, new cross-disciplinary courses, and applied research activity.

The research program offers faculty and students opportunities to work individually and cooperatively on topics of concern relating to international development and social change. Recent research projects have included

- developing a national environmental monitoring system in collaboration with Sudan's Institute of Environmental Study
- assisting with regional planning for municipal development in three secondary cities in Ecuador
- working with the National Environment and Human Settlement Secretariat in Kenya to produce district environment assessment profiles
- establishing trends in renewable resources in five East African countries.

In all our research, we are concerned not only with the relationship between technological intervention, finite resources, and social change in the developing world, but also with relations between the poor and the more affluent nations. Associated with these collaborative research efforts are seminars, symposia, internships, and summer research activities.

The Program for International Development and Social Change is flexible, permitting students to participate in designing their own interdisciplinary curriculum for the study of development problems. It aims to meet the needs of three different groups of students:

First, it provides one of the few programs in the United States that permits undergraduate students to take a liberal arts B.A. degree focused on development. Students may major in international development or they may take international development as a double major in conjunction with a related discipline such as geography, economics, government, or sociology.

Second, it provides an opportunity for undergraduates qualified to go on in the program to complete a five-year B.A.-M.A. degree with a view to a career in the development field.

Third, it provides a self-contained program for students coming from other universities who want to obtain the necessary background and complete an M.A. in order to pursue a career in the development field.

UNDERGRADUATE PROGRAM

Undergraduates majoring in international development are expected to:

1. attain an understanding of the development process and its political, economic, historical, theoretical, and environmental aspects;
2. master basic skills including quantitative skills and techniques of economic and social analysis, and are strongly encouraged to develop competence in a foreign language;
3. develop an investigative/research approach to an actual problem and attempt to apply the growing body of theoretical knowledge in an internship experience;
4. pursue a career track—for example, resource management, or women in development—chosen in consultation with a faculty adviser.

COURSE REQUIREMENTS

1. *Basic orientation:* Majors take the introductory *Development Problems* course, development economics, and three additional core courses in politics, resource management, and sociocultural issues. Students transferring from other majors or universities may substitute equiva-

lent courses. Unless they otherwise satisfy the prerequisites for development economics (with permission of instructor), they also must take Economics 10 and 11, *Issues and Perspectives* and *Principles of Economics*.

2. *Area of specialization:* Majors will take at least four courses in an area of specialization they select in consultation with an ID faculty adviser. Students may follow the pattern set out in one of several established tracks—for example, resource management, rural development, anthropology, or health management—or a student may design a course sequence, subject to approval by an appropriate faculty member, that creates a new focus. In every case, the area of concentration should be looked upon as an opportunity for students to link their interest in development with a focus in a specialized field.
3. *Skills courses:* Majors take social sciences research methods and two of the following—computer science, statistics, or cartography. They should decide, in consultation with a faculty adviser, which language proficiency would be most helpful for their chosen development area.

Masters Program

The Masters Program in International Development affords the graduate student interested in pursuing an independent course of study the opportunity to work closely with faculty members from a broad range of disciplines. The program allows the student a large degree of flexibility in terms of thesis research while emphasizing a core of required classes designed to develop the student's quantitative, analytical, and research skills. These include development and theory, economic development and policy analysis, research methods and class work or competence in statistics, computer science and/or cartography. A minimum of eight course units is necessary.

Students are encouraged to develop their own fields of specialization in preparation for thesis research, which should be undertaken in the second year of study. Specializations selected by graduate students include women and development, resource management, development theory, rural development, international political economy, household economic behavior, local organization and participation, comparative ethnic relations. The thesis is normally completed in the third or fourth semester and may include field research.

COURSES

015 INTRODUCTION TO ECONOMIC GEOGRAPHY/ Lecture

Theories of the geography of the production of human existence out of nature are presented. The course emphasizes contemporary economic, social, and environmental problems. These include overpopulation, environmental crises, world food problems, uneven economic development, the spatial movement of industry and jobs, and regional decline and unemployment. The course concludes by discussing the disappearance of unique regional economies and cultures and the emergence of a world capitalist economy, culture, and consciousness.

Mr. Peet, Mr. Karaska

Offered every year

108 WORLD POPULATION/ Lecture

Is the population of our world growing too fast? Will the world encounter an overshoot leading to doomsday? To address these questions requires an understanding of the nature of population growth and socio-cultural re-

sponses to it. This course develops an understanding of this relationship through a mix of demography and population geography. World patterns of population distribution, history, and dynamics are explored, and the future of population problems is addressed. Writing course or two exams.
Mr. Turner
Offered every other year

111 GEOMORPHOLOGY OF THE HUMID TROPICS/ Lecture, Discussion

Many of the developing nations are situated either wholly or partially in a humid tropical setting. Because of fundamental differences in the environmental situation in this setting, the transfer of technology especially related to agriculture and water resources has been less than successful. This course provides the background required to understand the environmental setting for development in the humid tropics.
Mr. Lewis
Offered every other year

117 REVOLUTION AND POLITICAL VIOLENCE/ Lecture, Discussion

Analysis of the concept, the causes, and the process of revolution. Distinctions are made between revolution and other forms of political violence such as terrorism, rebellion, and coups. The course examines theories of revolution as well as specific case studies. The Russian and Chinese revolutions are studied as twentieth-century prototypes; comparisons are then drawn to recent revolutions in the Middle East and Latin America.
Ms. Sochor
Offered every year

120 INTRODUCTION TO SOCIAL ANTHROPOLOGY/ Lecture, Discussion

Analysis of non-Western societies with a focus on social structure. The emphasis is on the development of a comparative perspective and a nonethnocentric perspective on our own culture. Theoretical and topical interests vary with instructor.
Staff
Offered every year

125 DEVELOPMENT PROBLEMS/ Lecture, Discussion

Introduces students to the major issues and debates in the field of international development, by addressing a variety of concerns relevant to the Third World including colonialism, development and underdevelopment, growth and equity, trade and aid, North-South relations, emergence of class, and political ideologies. The class focuses on specific problems of food, population, and resources. Case materials are drawn from a number of countries including India, China, Kenya, Tanzania, Sudan, Mexico, Brazil, and Bangladesh.
Ms. Thomas
Offered every year

127 POLITICAL ECONOMY OF UNDERDEVELOPMENT/ Lecture

Do conventional explanations of underdevelopment strike you as false and unconvincing? A powerful and refreshing alternative perspective exists in Marxist and neo-Marxist theories of social change. This course reviews the main currents within this rich stream including theories of dependency, imperialism, accumulation world systems, unequal exchange, and mode of production. Marxist concepts are used to examine the international role of capital, multinational corporations, and regional decline. Finally, the course presents alternative models of socialist development.
Mr. Peet, Staff
Offered every year

136 SUB-SAHARAN AFRICA: ISSUES AND PROBLEMS/ Lecture, Discussion

Explores issues and problems confronting sub-Saharan Africa, including the legacy of colonialism, establishment of nation-states, changing production systems, the roles of women in existing economic structures, conflict in the Horn of Africa, relations with South Africa, the emergence of class, and strategies for socioeconomic change. Readings include contemporary literature, public documents, journals and newspapers, and secondary sources. Illustrative material is drawn selectively from East, West, and Southern Africa.

Ms. Thomas

Offered every other year

144 COMPARATIVE RACE AND ETHNIC RELATIONS/ Lecture

Both race and ethnicity have played and still play a vital role in local, national, and international affairs. For example, to understand the problems of the Middle East, it is vital to understand the role that ethnicity plays in local life, attitudes toward other people, and politics. This course enables students to understand and appreciate the nature of immigration, the experiences that migrants encounter in a new location, and the problems that migrants face. It is also hoped that students will get a better appreciation of their own historical and cultural backgrounds. Guest lecturers present material dealing with the Middle East, Africa, Latin America, and the Caribbean.

Mr. Hagopian-Gerber

Offered every year

145 ENVIRONMENTAL MANAGEMENT AND RESOURCE DEVELOPMENT IN CHINA/ Lecture

A survey of the world's most important and complex set of environmental and resource problems: environmental management and resource development in China, the home of one-quarter of the earth's population. Land and water, agricultural resources, energy and pollution, urban areas, human resources, education and technology, natural and historic areas. Environmental and resource issues in the larger context of Chinese civilization. Prospects for the future.

Mr. Major

Offered every other year

169 INTRODUCTION TO INTERNATIONAL RELATIONS/ Lecture

Refer to course description under Government 169.

Mr. Trachte

175 MANAGEMENT OF ARID LAND/ Seminar

Focuses on cultural ecology in arid lands. Drylands are risky and often inhospitable places in which to live. Yet people choose to occupy such places and to wrest a living from sparse and scattered resources. Those farmers, herders, hunters, and urban dwellers who are successful have coping strategies for dealing with drought, desertification, and environmental change. Comparison of these strategies in both developing and industrialized societies identifies obstacles to and opportunities for successful management of drylands in support of a growing population.

Mr. Johnson

Offered every other year

176 COMPARATIVE ECONOMIC SYSTEMS/ Lecture

Surveys both the major theoretical models of economic systems and the actual workings of contemporary economic systems. Selective aspects of mixed economies, market socialist economies, and centrally planned econ-

omies are examined. Topics include the indicative planning in France, permanent employment system in Japan, industrial democracy in Sweden, workers' self-management in Yugoslavia, economic reforms in Hungary, and resource allocation in the U.S.S.R.

Mr. Hsu

Offered every year

177 CHINESE AND JAPANESE ECONOMIES/ Lecture

A comprehensive survey of the Chinese and Japanese economies—their development, institution, and policies. Topics include historical background, agricultural development, industrial organization, fiscal and monetary policies, employment and labor, Sino-Japanese relations, and relations with the U.S.

Mr. Hsu

Offered every other year

179 HEALTH PROBLEMS AND HEALTH CARE DELIVERY IN THE DEVELOPING COUNTRIES/ Lecture

Examines the health care problems of developing societies with special emphasis on the nutritional and population parameters of these problems. Also examine the relationship of health to political and socioeconomic development and points out some of the successes and failures of health development planning in the past decade. The rural health care delivery systems of selected socialist and capitalist societies are examined and compared.

Staff

Offered every other year

189 REMOTE SENSING OF THE ENVIRONMENT/ Lecture, Laboratory

Offers a broad introduction to one of the most powerful tools now being developed for surveying geographical phenomena. It covers the use of remotely-sensed data such as air photos and a variety of satellite imagery to provide answers to many of the problems about our physical and human environment.

Mr. Steward

Offered every year

201 APPLICATION OF SYSTEMS ANALYSIS TO ENVIRONMENTAL PROBLEMS/ Lecture

Systems analysis as a tool for problem solving is the focus of this course. The fundamental concepts and their application to environmental problems are discussed. Stress is on the use, applicability, and limitations of this method in analyzing complex environmental systems and their physical, social, and economic aspects. Prerequisite: some knowledge of basic algebra. A seven week course offered for half credit.

Mr. Schwarz

Offered every year

202 THE BIOSPHERE/ Lecture

Building on a foundation of general knowledge of physiology, genetics, taxonomy, and ecology, the course provides a biological context and perspective for the analyses and assessment of man-made environmental hazards. Prerequisite: introductory course in biological science or concurrent registration in such course with permission of instructor. A seven week course offered for half credit.

Mr. Erickson

Offered every year

203 ENVIRONMENTAL COGNITION AND BEHAVIOR/ Lecture, Discussion

Examines selected themes of environmental behavior including how individualized groups construct their experience of the environment, how this

"construction" relates to their behavior, how we go about discovering the nature of individual perception and the perception behavior link, what this knowledge contributes to environmental planning and design. A seven week course offered for half credit.

Staff

Offered every year

204 ENVIRONMENTAL PLANNING/ Lecture, Discussion

An overview of environmental planning from a broad and general viewpoint. The planning process, the techniques used, and the institutions involved are examined. A case study serves as one of the vehicles to analyze planning. A seven week course offered for half credit.

Mr. Schwarz, Mr. Major

Offered every year

210 ENVIRONMENTAL PROTECTION LAW/ Lecture, Discussion

A free-wheeling discussion of pollution control in the real world and its legal, institutional, and political framework: federal, state, and local laws and their scientific basis; agency practice and procedure; public litigation and private "citizens suits"; selecting theories and remedies, both civil and criminal; tactics and strategies; citizen "watchdog" groups; corporate and media responsibility; economy versus ecology; old tools, new tools potential for change. The course includes reading in multilithed materials—statutes and journal articles. Informal student advocacy panels are utilized.

Staff

Offered every other year

212 WOMEN AND SOCIAL CHANGE/ Seminar

Examines the central assumptions and theories about the status and roles of women from multi-disciplinary, cross-national, cross-cultural perspectives, emphasizing the Third World. Explores issues pertaining to the division of labor between the sexes, questions of class and gender, the household economy, women's roles in economic development, population, education, the internationalization of capital and women's work, women in peasant economies, and women in politics and political organizations. Materials focus on women's experience in Africa, Asia, the Middle East, and Latin America.

Ms. Thomas

Offered every other year

218 DEVELOPMENT AND RESOURCE MANAGEMENT/ Seminar, Discussion

The world is changing more rapidly than at any time in history. This course reviews the patterns of change in the Third World, examines the role of environment and resource management in development, and allows students to develop their own in-depth case studies.

Mr. Lewis

Offered every other year

220 ETHNOLOGY: ARMENIAN CULTURE AND SOCIETY/ Lecture

An intensive investigation of Armenian history, politics, culture, social institutions, and religion. Topics to be discussed include prehistory, the role of the Church, the dynasties, the Genocide, and Armenians throughout the Diaspora. Attention is given to important Armenian figures such as Saint Vartan, Saroyan, Issahakian, Zarian.

Mr. Hagopian-Gerber

Offered every year

222 DEVELOPMENT AND CHANGE IN COMMUNIST POLITICAL SYSTEMS/ Lecture, Discussion

Examines the relationship between ideology, political power, and levels of economic development in the formulation of communist political systems. Poses the central question: How do communist political leaders attempt to achieve the dual goals of development and socialist transformation? Brief examination of the Soviet Union as a prototype of a communist political system. How successfully did the Soviet Union promote the transition to socialism? For answers, this course looks at subsequent revolutions in Eastern Europe, China, and Cuba to determine their adherence to, or rejection of, the Soviet model. What alternative strategies have evolved? Examines sources of change and limits to change in communist political systems.

Ms. Sochor Offered every other year

223 CULTURES OF THE MIDDLE EAST/ Lecture, Discussion

An ethnographic introduction to current Middle Eastern cultures, emphasizing the great diversity of cultural patterns present there, and analyzing the religious, environmental, political, and economic bases for the formation of separate cultural groups.

Staff Offered every other year

225 BLACK POLITICS IN THE UNITED STATES/ Lecture

Analyzes the distribution of power as it affects the Black community. Among those topics to be explored are: Black congressmen and lobbies, Black politics in cities, the impact of Blacks on the bureaucracy, and a comparison of Northern and Southern Black politics.

Ms. Enloe Offered every other year

228 ECONOMIC DEVELOPMENT/ Lecture

Examines the major theories of economic development, the major problems confronting the less developed countries, and the policies and strategies appropriate for economic development. Topics include agricultural development, income distribution, industrialization strategies, foreign aid and investment, population, labor, and employment. Offered in alternate years with 128.

Mr. Hsu Offered every other year

238 ISSUES IN PUBLIC HEALTH

Refer to course description under Biology.

Mr. Reynolds Offered every year

242 THE POLITICAL ECONOMY OF RURAL CHANGE/ Lecture, Discussion

Explores and analyzes the critical issues of rural development and underdevelopment in the Third World. Among topics to be addressed are strategies for rural change; program and project design; rural stratification; equity, growth and welfare issues; and the impact of technology on rural socioeconomic systems. The relationship of various government policies to rural development and the linkage between local communities and world economic systems are explored. Illustrative material is drawn selectively from Asia, Africa, and Latin America.

Ms. Thomas Offered every other year

249 INTERNATIONAL POLITICAL ECONOMY

Refer to course description under Government 249.

Mr. Trachte

251 PROBLEMS IN ENVIRONMENTAL MANAGEMENT/ Lecture, Discussion

An examination of current approaches and methods in environmental management, with emphasis upon theories and skills needed for applied work in the field. An advanced undergraduate seminar intended particularly for geography seniors to provide an integration of skills and concepts in environmental geography through the examination of concrete management problems. Topics include history of environmental geography, environmental data bases, environmental and social impact assessment, writing research proposals, decision-making aids.

Mr. Kasperson, Staff

Offered every year

256 PROBLEMS IN WATER RESOURCES PLANNING/ Problems course

Water resources planning techniques and water resources engineering, economic, social, and environmental topics are reviewed and applied in a realistic planning exercise. Students working in groups prepare, for a selected region or river basin, a preliminary planning document that could be used as a guide for future detailed planning. Emphasis is on the preparation and the written and oral presentation of the planning document in a professional manner that would be acceptable in the real world. Prerequisite: A 200-level course in environmental assessment; physical geography; economics; or environment, technology, and society, or permission of instructor.

Mr. Schwarz

Offered every other year

257 THEORY OF MULTIOBJECTIVE RESOURCE EVALUATION/ Lecture

Introduction to the theory of multiobjective resource evaluation. Presents the full range of criteria required for the economic, social, and environmental evaluation of resource programs and projects, together with selected applications.

Mr. Major

Offered every year

266 ETHNOLOGY AND DEVELOPMENT IN THE CARIBBEAN/ Lecture

Focuses upon various problems in the analysis of socioeconomic change in the Caribbean culture area, offering an extensive and intensive view of the politics, ethnology, problems, and prospects of development in the Caribbean and Central America.

Mr. Hagopian-Gerber

Offered every other year

267 POLITICAL ANTHROPOLOGY/ Lecture, Discussion

Examines varying levels of sociopolitical culture. Cultures viewed include hunters and gatherers, contemporary Russian, and selected African societies. A certain amount of attention is given to Caribbean political systems and movements.

Mr. Hagopian-Gerber

Offered every year

268 ECONOMIC ANTHROPOLOGY/ Lecture, Discussion

A comparative study of tribal and state economic organizations, focusing on the ways in which production, distribution, and consumption are in-

stitutionalized cross-culturally. Topics to be considered include the nature of work, the idea of surplus, modes of exchange and distribution, social structure, and political structure.

Staff Offered every other year

269 ENVIRONMENT AND DEVELOPMENT IN AFRICA/ Lecture, Discussion

Efforts to promote economic growth in sub-Saharan Africa have resulted in mixed outcomes. Few successful development projects exist, and the difficulties posed by environmental constraints and human impacts on environment remain considerable. The complex relationship between nature, society, and technology in the use of Africa's resources is the focus of the course.

Mr. Johnson Offered every other year

271 FIELD METHODS: CONCEPTS AND ISSUES IN ANTHROPOLOGY/ Seminar

Deals with theoretical and practical issues in the conduct of anthropological field work, including an intensive survey of the literature and instruction in use of tape recording and camera equipment involved in field work. It includes on-site experience, where students obtain and conduct a limited field research project.

Mr. Hagopian-Gerber Offered every other year

276 CULTURAL ECOLOGY IN THE HUMID TROPICS/ Lecture

About no region of the earth are there such misconceived mystiques as the humid tropics. Mid-latitude biases have led to incorrect assessments of the composition of these wet, hot lands, of traditional uses of them, and of their suitability, both past and present, to support large populations and high living standards. These issues are examined by focusing on the range of environments and livelihood strategies that have existed or could exist in this region. Two exams.

Mr. Turner Offered every other year

278 DEVELOPMENT AND APPLIED ANTHROPOLOGY/ Seminar

Anthropology, because of its emphasis on a holistic approach to culture, coupled with participant-observation field experience, is uniquely suited to the analysis and direction of cultural change. The purpose of this course is to develop an anthropological perspective with respect to problems of direction, cultural change, intervention, and "modernization." Areas to be discussed include problems of "applied" theory, unintended consequences of institutional change, and psychological and cultural impediments to modernization. Critical attention is paid to the ethnocentrism of "development" and modernization.

Mr. Hagopian-Gerber Offered every year

283 SUPERPOWERS AND THE THIRD WORLD/ Seminar

Considers the goals and policies of the Superpowers toward the Third World and examines specific case studies of instances when these goals and policies were carried out, amended, or challenged. Some of the underlying questions posed in this course include the following: What are the Superpowers' expectations of, and sources of influence on, the Third World? To what degree are North-South issues affected by East-West considerations? How are local problems exacerbated by Superpower interven-

tion? What foreign policy options do Third World countries have? What are the long-range prospects for the international system as a whole?

Ms. Sochor

Offered every year

284 LANDSCAPES OF THE MIDDLE EAST/ Lecture, Seminar

A diverse array of landscapes, economies, and cultures comprise the Middle Eastern culture realm. The modernization and transformation of the traditional Islamic and non-Islamic patterns of life and livelihood in the Middle Eastern cultural mosaic are the focus of this course. Literature and ethnographic description supplement geographic analyses.

Mr. Johnson

Offered every other year

286 AGRICULTURE IN TRADITIONAL ECONOMIES/ Lecture

Subsistence, transitional, and smallholder agriculturalists are the focus of investigation. Emphasis is placed on the economic behavior and livelihood strategies employed in these economies and on the theories of their change. Discussion paper.

Mr. Turner

Offered every other year

288 DISEASE AND HEALTH SERVICES IN THE THIRD WORLD/ Seminar

Examines the epidemiology and geographical distribution of several diseases including: malaria, cholera, schistosomiasis, trypanosomiasis, and malnutrition. The relationship of disease extension to environmental changes that are secondary to development activities also is examined as are some of the different programmatic efforts that have been developed to control these disease problems.

Staff

Offered periodically

289 POLITICAL ECONOMY OF DEVELOPMENT/ Seminar

Examines the current state-of-the-art and debates surrounding differing theories of underdevelopment and their implications for international and regional development.

Staff

Offered every other year

290 DEVELOPMENT PROJECT MANAGEMENT/ Seminar

Explores relationships between development theory and project implementation. Topics include project design, implementation, management, budget monitoring, scheduling, and evaluation. Students develop one simulated project from beginning to conclusion as the major written assignment.

Mr. Ford

Offered every year

291 OXFAM STUDY TOUR

Offers an opportunity for students to gain credit for an intensive two or three week field study, organized by Oxfam-America, a Boston-based development agency, in one or more developing countries. Students join the field tour (at Oxfam-America specified fees) and write a research paper analyzing a development issue or problem.

Staff

Offered every year

294 THEORIES OF DEVELOPMENT AND SOCIOECONOMIC CHANGE/ Seminar

Provides a broad understanding of the major theories of development and socioeconomic change. Incorporates the perspectives of a variety of disci-

plines and applies them to specific policy issues including those related to the international economy, industrialization strategies, the role of the state, distributional issues, technology transfer, population, and urbanization. The approach is both historical and theoretical.

Staff Offered every year

295 ECONOMIC DEVELOPMENT AND POLICY ANALYSIS/ Seminar
Examines various approaches and strategies for economic development emphasizing their implications for institutional change and patterns of resource allocation through case studies of selected countries. The impact of various policy choices on industry, agriculture, domestic and international trade, finance, and labor use are analyzed.

Ms. Seidman Offered periodically

299.1 READINGS IN INTERNATIONAL DEVELOPMENT/ Discussion
Variable credit and topics relevant to issues of international development. Also offered as 399.1.

Staff Offered every year

299.2 RESEARCH IN INTERNATIONAL DEVELOPMENT
Variable credit, differing topics, may be associated with international development research projects. Also offered as 399.2.

Staff Offered every year

302 THESIS RESEARCH
Master's degree candidates may register for thesis research while working on research for their master's degree thesis.

Staff Offered every year

310 RESEARCH SEMINAR IN DEVELOPMENT GEOGRAPHY
Designed for thesis and dissertation level students working in the areas of resources, development, and environmental cognition, who are developing proposals or preproposal research papers. The seminar provides a forum for discussion, criticism, and practical advice. Seminar paper.

Mr. Turner Offered every year

336 HOUSEHOLD ECONOMIC BEHAVIOR AND THE GEOGRAPHY OF DEVELOPMENT/ Graduate Seminar, Lecture, Discussion
Explores the nature and role of the household as a socioeconomic organization and primary decision-making unit in developing countries. Key issues relate to semi-subsistence farm households, migration, urban-rural linkages, gender and age divisions of labor, women farmers, and cash crop versus food crop. Decision-making theory and the economics of household production are studied as a basis for household-level research on resource management.

Ms. Berry Offered periodically

340 DISSENT ON DEVELOPMENT: A GEOGRAPHIC APPROACH TO CONTROVERSY ON ISSUES AND THEORIES

A graduate level seminar to explore conflicts concerning the origins of development problems and the controversy in theoretical and practical approaches to dealing with them. Among the questions to be addressed are: Why the poor stay poor? Why resettlement schemes don't work? Is population growth one of the causes of underdevelopment? Is there an urban bias in development? Can subsistence agriculture be modernized?

Ms. Berry Offered every year

**358 PROFESSIONAL SEMINAR IN RESOURCE PROJECT
EVALUATION/ Seminar**

Covers best-practice applied methods of resource project evaluation as suggested by current research, the procedures of the World Bank and leading U.S. resource agencies. The intent of the seminar is to bring advanced students to a level of preparation adequate for professional work in resource project evaluation.

Staff

Offered every year

For additional courses related to International Development, refer to the following History Department listings:

120 AMERICA AND THE WORLD

Refer to course description under History.

Mr. Billias, Mr. Little

177 LATIN AMERICAN HISTORY

Refer to course description under History.

Mr. Little

179 THE HISTORY OF TRADITIONAL AFRICA

Refer to course description under History.

Mr. Ford

180 HISTORY OF MODERN AFRICA

Refer to course description under History.

Mr. Ford

**181 CHINA 1840-1949: A GREAT TRADITION IN
TRANSFORMATION**

Refer to course description under History.

Staff

182 MODERN CHINA

Refer to course description under History.

Staff

**279 PROSEMINAR: LATIN AMERICA REVOLUTION, REFORM AND
REACTION**

Refer to course description under History.

Mr. Little

**283 CLIMATE AND HISTORY: ANALYSIS OF THE INFLUENCE OF
CLIMATE ON HISTORICAL CHANGE**

Refer to course description under History.

Mr. Ford

284 CLIMATIC HISTORY AND DEVELOPMENT

Refer to course description under History.

Mr. Ford

285 PROSEMINAR: THE MULTINATIONAL CORPORATION

Refer to course description under History.

Mr. Little

286 CITIES IN AFRICA

Refer to course description under History.

Mr. Ford

291 SEMINAR IN ADVANCED TOPICS IN INTERNATIONAL RELATIONS

Refer to course description under History.

Mr. Trachte

International Relations

PARTICIPATING FACULTY

Douglas Little, Ph.D., *program codirector*: U.S. diplomatic history, America since 1900, modern Latin America

Kent Trachte, Ph.D., *program codirector*: international relations, international political economy, foreign policy, national security policy

Stephen Baker, Ph.D.: international economics

Daniel R. Borg, Ph.D.: modern German history, modern European history, political history

Paul Lucas, Ph.D.: Western civilization; Europe, especially England and France, 1500-1800; European intellectual history, 1650-1945

Zenovia A. Sochor, Ph.D.: Soviet Union, communist countries, foreign policy

Roger Van Tassel, Ph.D.: international trade and finance, public economy

Robert Hsu, Ph.D.: economic development, comparative economic systems, international economics

Robert Ross, Ph.D.: urban studies, political sociology, political economy, social policy

INTERNATIONAL RELATIONS CONCENTRATION

The International Relations Program (IR) at Clark provides students with an opportunity to receive a certificate of concentration. There is no major in international relations; a student electing to pursue a concentration in this field normally majors in either history or government. An interdisciplinary approach characterizes the IR concentration. This approach reflects the increasingly complex nature of world affairs and the breakdown of traditional disciplinary boundaries between diplomatic history, international politics, and international economics. The IR core curriculum consists of a set of courses drawn from government, history, economics, sociology, and international development.

Requirements:

A. A student wanting to pursue a concentration in international relations must take a *core cluster* consisting of the following three courses:

1. Government 169 *Introduction to International Relations*
2. History 238 *U.S. Foreign Relations Since 1941*
3. Economics 108 *International Financial Developments*

B. In addition, IR students must choose *one of the following two analytical clusters*—world economics or comparative diplomacy—consisting of three courses:

World Economics

1. Government 249 *International Political Economy*
2. History 125 *International Development*
3. Sociology 257 *Comparative Urbanization*

Comparative Diplomacy

1. Government 179 *Comparative Foreign Policy*
2. History 190 *Twentieth Century Global History*
3. Economics 176 *Comparative Economic Systems*

C. IR students must take a *capstone seminar* related to their analytical cluster. Examples of suitable capstone seminars include Government 283 (*Superpowers in the Third World*), History 285 (*Proseminar on the Multinational Corporation*), and Government 289/History 291 (*Advanced Topics in International Relations*).

D. IR students must fulfill the requirements for their history or government majors.

E. IR students should also note that Economics 10 is a prerequisite for all 100-level economics courses.

Italian

See Department of Foreign Languages and Literatures

Judaic Studies

PARTICIPATING FACULTY

Barbara Geller Nathanson, Ph.D., *director*: ancient Jewish history, history of early Christianity, history of world religions, Near Eastern archaeology

Paul F. Burke Jr., Ph.D.: Greek and Latin language and literature, classical mythology, classical art and archaeology, ancient history

Stanley M. Davids, M.H.L.: Rabbinic literature, contemporary Israeli culture and politics, liturgy, European Jewish history

Moshe Waldoks, Ph.D.: modern Jewish history and thought, Eastern European Jewish history, Jewish mysticism, Jewish humor

COURSES

The following courses in Judaic studies are offered in the Departments of History and Foreign Languages and Literatures. For course descriptions check the course listings under those departments. For further information concerning the Judaic Studies Program, to discuss the possibility of integrating Judaic studies courses within various departmental majors, or to develop a concentration or self-designed major in Judaica, contact Ms. Nathanson.

HEBREW LANGUAGE AND LITERATURE COURSES

(See Department of Foreign Languages and Literatures.)

101-102 ELEMENTARY HEBREW

Refer to course description under Hebrew.

Ms. Nathanson

103 INTERMEDIATE HEBREW

Refer to course description under Hebrew.

Ms. Nathanson

104 INTERMEDIATE/ADVANCED HEBREW

Refer to course description under Hebrew.

Mr. Waldoks

HEBREW LITERATURE/JUDAIC STUDIES COURSES CONDUCTED IN ENGLISH

119 INTRODUCTION TO THE HEBREW BIBLE

Refer to course description under Hebrew.

Mr. Davids

123 THE RABBINIC LITERARY TRADITION

Refer to course description under Hebrew.

Mr. Davids

124 THE JEWISH LEGAL TRADITION

Refer to course description under Hebrew.

Mr. Davids

140 HISTORY OF JEWISH MYSTICISM

Refer to course description under Hebrew.

Mr. Waldoks

160 MODERN ISRAELI LITERATURE

Refer to course description under Hebrew.

Mr. Davids

185 MODERN JEWISH LITERATURE

Refer to course description under Hebrew.

Mr. Waldoks

HISTORY

173 INTRODUCTION TO THE HISTORY AND CULTURE OF ANCIENT ISRAEL

Refer to course description under History.

Ms. Nathanson

174 THE JEWISH EXPERIENCE

Refer to course description under History.

Staff

223 THE AMERICAN JEWISH EXPERIENCE: A HISTORY OF JEWS IN THE UNITED STATES

Refer to course description under History.

Mr. Waldoks

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Ms. Nathanson

274 RABBIS, ROMANS AND RUINS

Refer to course description under History.

Ms. Nathanson

276 OUT OF THE GHETTO: MODERN JEWISH HISTORY AND THOUGHT

Refer to course description under History.

Mr. Waldoks

277 HISTORY OF ZIONISM AND THE RISE OF ISRAEL

Refer to course description under History.

Mr. Waldoks

278 HOLOCAUST: THE DESTRUCTION OF EUROPEAN JEWRY (1933-1945)

Refer to course description under History.

Mr. Waldoks

CLASSICS

160 JEWS AND CHRISTIANS IN THE ANCIENT WORLD

Refer to course description under Classics.

Mr. Burke

273 WOMEN IN ANTIQUITY

Refer to course description under History.

Ms. Nathanson

274 RABBIS, ROMANS AND RUINS

Refer to course description under History.

Ms. Nathanson

Management

GRADUATE SCHOOL OF MANAGEMENT FACULTY

Peter P. Gil, Ph.D., *dean*: unemployment and job dilution caused by technological change, education for management in the private and public sectors, responsible management of societal resources

Patricia M. Anderson, Ph.D.: marketing research, retailing, advertising, consumer behavior

Robert C. Bradbury, Ph.D.: health systems planning, health promotion, cost containment

Young M. Chae, Ph.D.: applications of operations research and computer modeling to health organizations

Gary N. Chaison, Ph.D.: union structure, government growth and collective bargaining, personnel administration

Peter S. Goodrich, Ph.D.: international accounting, accounting for non-profit organizations, behavioral implications of accounting systems

Jessica R. Jenner, Ph.D.: career development, stress management, behavior in groups and organizations

Thomas W. Landers, M.B.A., C.P.A.: taxes, auditing, financial planning, MIS

Harold T. Moody, Ph.D.: marketing research, marketing in service organizations

Martin R. Moser, Ph.D.: business policy and planning, corporate social responsibility and business ethics, the management of research, development and engineering

William Naumes, Ph.D.: business policy and planning, small business planning
Mark S. Plovnick, Ph.D.: organizational development, team development, health care management, union-management relations
Bharat Ruparel, Ph.D.: operations management, MIS, operations research
Alan C. Simpson, Ph.D.: investments, international finance, economics
Maurry Tamarkin, Ph.D.: future markets, corporate finance, diversification
Lewis R. Tucker, Ph.D.: marketing strategy, industrial and international marketing, marketing for nonprofit organizations

PART-TIME FACULTY

Judith Budz, Ph.D.
William P. Densmore, B.S.M.E.
Donald E. Fries, M.B.A., J.D.
Jerome L. Langer, M.B.A.
Richard P. Mandel, J.D.

AFFILIATED FACULTY

Carolyn E. Cotsonas, J.D.
N. Lynn Eckhert, M.D., Dr. P.H.
Gale L. Kelly, Ph.D.
Alan M. Stoll, M.P.A.
Keith J. Waterbrook, M.H.A.
Janice B. Wyatt, M.H.A.
John T. O'Connor, Ph.D.

UNDERGRADUATE PROGRAMS IN MANAGEMENT

The Graduate School of Management offers two programs to undergraduates: the undergraduate major and the Five-Year B.A./M.B.A. Program. The program descriptions follow. Students with additional questions should contact the coordinator of undergraduate programs in management. Students with questions concerning the M.B.A. Program should refer to the Clark University M.B.A. catalog.

FIVE-YEAR B.A./M.B.A. PROGRAM

The Graduate School of Management offers undergraduate students the option of participating in a five-year program while at Clark. In this program they may earn a B.A. in their major, as well as the M.B.A. degree. The major features of the program are:

- 1) an undergraduate major in any of the liberal arts disciplines at the University. Business/management is not acceptable as a major for this program;
- 2) a six month, full-time internship off campus to bridge theory and practice, during the junior year;
- 3) graduate courses, beginning in the senior year, which lead to the M.B.A. degree, and which help prepare students for management positions in business, government, and nonprofit organizations.

The five-year program is designed to meet several needs expressed by students today. First, it provides a well rounded education by combining an undergraduate liberal arts education with a master's degree in business administration. Second, the six month, full-time internship provides an experience useful both in the M.B.A. program and in attaining employment upon graduation. Third, the total time for getting a liberal arts bachelor's degree and an M.B.A. is reduced to five years.

The program is designed to provide education that will give both preparation for immediate employment and potential for growth toward impor-

tant positions in organizations. Ultimately, the program bridges the gap between liberal arts education and practical applied learning.

The Program

The program is a carefully designed sequence of educational and work experience, which involves each student from the freshman year through the graduate year. Although it is possible to begin the program as a sophomore, the demands are such that only those who begin early in their college careers may be able to complete all requirements within five years.

Briefly, the program involves five sets of learning experiences:

- 1) a sequence of three undergraduate management courses in the freshman, sophomore, and junior years preparing students for an off-campus internship
- 2) related courses in other departments in economics, statistics, computer programming, and mathematics, which contain the tools needed for the graduate courses in management
- 3) an off-campus supervised internship lasting six months, earning four academic credits
- 4) graduate management courses taken in the senior year
- 5) completion of the graduate M.B.A. program during the fifth year

Advising of Students and Entrance into the Program

Students must plan their courses carefully during their undergraduate years in order to complete the requirements both for their major and for the M.B.A. program in the time provided. The program's undergraduate adviser is available to help and advise any students interested in the five-year B.A./M.B.A.

Entrance into the program occurs at the end of the sophomore year. Interested students submit an application to the Graduate School of Management for participation in the Five-Year Program during the spring term of the sophomore year. As part of the application process, students are required to take the Graduate Management Admission Test (GMAT). Application approvals are conditional upon the successful completion of the B.A. degree. Accepted students enroll in Management 208, *Cases in Management*, in the fall semester of their junior year. Arrangements are made for internships through this class, and students work on internships during the spring semester of their junior year.

To summarize, students are accepted into the M.B.A. program after the sophomore year, continue taking undergraduate courses and the internship in the junior year, and begin taking graduate courses in the senior year.

The Internship

Each internship is a carefully matched experience between a student and a work situation in the management community. Internships occur during the second semester of the junior year and typically involve six months of work experience (spring semester plus two months). The internship is counted as an academic experience for one full semester of four credits.

The Graduate School of Management arranges job placement and oversees students on the job. Students are provided introductory material to their internships in Management 208, and arrangements are made for each internship. Finally, while in the internship, student interns are also involved in seminars to enrich their learning experience.

A written project based on the student's experience in the internship is required for the successful completion of the academic credit. This paper,

as well as the work experience itself, is under the direction of faculty members of the Graduate School of Management.

Summary of Requirements:

- 1) Eight undergraduate courses in management—100, 201, 203, 208 and an internship (4 credits)
- 2) Five related courses—Economics 10, 11, 160, Math 11 and Computer Science 101
- 3) Thirteen M.B.A. courses—five as an undergraduate following the internship, eight as a graduate including electives.

Sample Schedule

An example of a schedule an economics major could pursue:

<i>Year</i>	<i>Fall Semester</i>	<i>Spring Semester</i>
Freshman	Computer Science 101 Economics 10 Elective Elective	Mathematics 11 Economics 11 Elective Elective
Sophomore	Management 201 Economics 205.1 Elective Elective	Economics 205.2 Economics 160 Elective Elective
Junior	Management 203 Management 208 Mathematics 120 Economics elective	Internship (4 credits)
Senior	MBA 310 MBA 340 Economics elective Elective	MBA 330 MBA 343 MBA 360 Economics elective
Fifth year	MBA 337 MBA 341 MBA 362 MBA 378	MBA 342 MBA 345 MBA 360 MBA 390

UNDERGRADUATE MAJOR IN BUSINESS/MANAGEMENT

Students interested in a career in management immediately after graduation, whether in a profit or nonprofit organization (business, government, education, health care delivery, religious institution), should consider business/management as an undergraduate major. The major offers students the opportunity to develop skills useful for a career within the framework of a liberal arts education.

Skills useful for a career or for additional training are developed at the same time as the student acquires the educational breadth and depth essential for personal and professional growth. The major draws upon a variety of disciplines, providing a program that is both practical and broadly educational. Required and optional courses are drawn from the offerings of a number of academic departments. Enrollment in the business/management major is limited and is based on performance in the

freshman and sophomore year courses. Students apply for admission to the major at the end of their sophomore year.

Within the general requirements of the program, and consistent with the concept of the extended major, students may wish to concentrate their interests in particular offerings that relate to aspects of management meeting their needs and interests. For example, computer science, mathematics, statistics, and accounting electives provide a basis for a career in the data processing, planning, and related specialties; psychology, sociology, philosophy, and government stress human behavior in a social context; courses in environment, technology and society or in international development further an awareness of issues and skills useful in managing public and private responses to important issues; language and literature courses help develop oral and written communication skills essential in virtually all aspects of management.

Although students may extend their interests in any of the above directions, it should be noted that the general thrust or bias of the program is a humanistic one. This emphasis stems from the following considerations:

- a) the University's desire to place the program well within the liberal arts framework;
- b) a commitment to the idea that management, after all, means getting things done through people.

Business/management at Clark offers students a vocational emphasis providing the necessary prerequisites for a job placement with a bachelor's degree. Students interested in graduate study towards an M.B.A. degree are encouraged to major in an area other than business/management and to consider the Five-Year B.A./M.B.A. Program.

A student's required courses for completion of the management major are those that were in effect at the time he/she was accepted into the Management Program (between the sophomore and junior years). The requirements that follow apply to those students accepted into the major in 1984. For a current listing of requirements, contact the Graduate School of Management.

Required course for all majors: (Note: These courses should be taken approximately in the order listed. Some courses are cross-listed.)

FRESHMAN AND SOPHOMORE LEVEL

Mathematics 11, *Introduction to Mathematics*, or successful completion of the math placement exam

Economics 10, *Issues and Perspectives*

Economics 11, *Principles of Economics*

Management 204 or Computer Science 101, *Introduction to Computer Programming*

Management 201, *Principles of Accounting*

Management 202 or Economics 160, *Introduction to Statistical Analysis*

JUNIOR LEVEL

Management 203, *Managerial Accounting*

Management 210, *Management and Behavioral Principles*

Management 230, *Marketing Management*

Management 240, *Corporate Finance*

Management 250, *Operations Management*

Management 262 or Philosophy 133, *Business Ethics*

SENIOR LEVEL

Management 260, *Business Policy*

Management 278, *Business Law*

Track requirements for all majors: Students must, by the first semester of their junior year, declare themselves as pursuing tracks A, B, C, or D within the major. Four courses from a track are required for completion of the major. Two of these must be 200-level management courses. The tracks are: Economics and Finance, Public Sector Management, Human Resource Management, Quantitative Analyses for Management. With permission from the program coordinator, students may design their own tracks.

A. *Economics and Finance*

Management 242, *Investments*, and Management 244, *Federal Tax Accounting*, plus two of the following:

1. Economics 113, *Monetary Economics: Theory and Policy*
2. Any 200-level economics courses

B. *Public Sector Management*

Management 225, *Human Resource Management*, and Management 226, *Industrial Relations* and two of the following:

1. Government 109, *Introduction to Public Policy and Administration*
2. Economics 126, *Public Policy Toward Business*
3. Economics 215, *Public Expenditures*
4. Sociology 246, *Social Planning and Social Policy*
5. MPA 320, *Policy Analysis**
6. MPA 330, *Public Budgeting**
7. MPA 350, *Public Administration in the American Democracy**
8. MPA 393, *Issues and Cases in Public Administration*

*available only to seniors, with permission.

C. *Human Resource Management*

Management 225, *Human Resource Management* and Management 226, *Industrial Relations*; plus two of the following:

1. Psychology 170 or Psychology 172, *Introduction to Social Psychology or Psychology of Personality*. (Both cannot be taken for the track.)
2. Psychology 201 or Psychology 206, *Laboratory in Social Psychology or Laboratory in Personality*. (Both cannot be taken for the track.)
3. Sociology 282, *Industrial Sociology*
4. Sociology 291, *Small Group and Interpersonal Processes*
5. Psychology 221, *Research in Social Psychology*
6. Psychology 244, *Seminar in Motivation*
7. Management 212, *Industrial Psychology*

D. *Quantitative Analyses for Management*

Management 251 or Math 247, *Operations Research*, one other 200-level management selection, plus two of the following:

1. Mathematics 119, *Linear Programming*
2. Mathematics 120, *Calculus, Part I*
3. Computer Science, 102, *Computer Applications*
4. Computer Science 103, *Introduction to COBOL Programming*
5. Computer Science 203, *Advanced COBOL Programming*
6. Economics 265, *Basic Econometric Theory*

COURSES

201 PRINCIPLES OF ACCOUNTING/ Lecture, Discussion

Elements of generally accepted accounting procedures are presented for several major types of institutions, such as business, government, educational, and health.

Staff

Offered every year

202 INTRODUCTION TO STATISTICAL ANALYSIS/ Lecture, Discussion

Examines basic concepts and techniques of statistical methods; descriptive statistics, permutation and combination, an introduction to probability theory, sampling distribution, standardized normal distribution and other related distributions, simple and multiple regression, simple forecasting, and statistical decision-making. This course is the equivalent of Economics 160.

Staff

Offered every year

203 MANAGERIAL ACCOUNTING/ Lecture, Discussion

This advanced course emphasizes accounting from the management perspective. Students learn principles of managerial decision making when using accounting information. Prerequisite: Management 201.

Staff

Offered every year

204 INTRODUCTION TO COMPUTER PROGRAMMING/ Lecture, Discussion

An introductory programming course emphasizing use of the computer and either BASIC or PASCAL programming language as a tool for problem-solving in management. Students develop a working knowledge of character representation and manipulation, number representation and arithmetic, subroutines and functions, arrays and indexing, and, most of all, structured programming techniques and algorithms that make programming easier. This course is the equivalent of Computer Science 101.

Staff

Offered every year

208 CASES IN MANAGEMENT/ Seminar

This one-semester course provides an overview, using a case approach, of the management decision-making that interrelates all of the functional and behavioral areas. Students meet with current interns to discuss their experiences and learning processes in work environments. Finally, students may consider, evaluate, and select an internship through this course which normally is required prior to taking an internship. Prerequisites: Economics 10, 11, 160 and 122, and Computer Science 101.

Staff

Offered every year

210 MANAGEMENT AND BEHAVIORAL PRINCIPLES/ Lecture, Discussion

Concerns general principles of management, with a special emphasis on the behavior of people in an organizational context. Topics include principles of organization, decision making, leadership, motivation and rewards, job satisfaction, and appraising employee performance.

Staff

Offered every year

212 INDUSTRIAL PSYCHOLOGY/ Lecture, Discussion

A survey of major topics in the area of industrial/organizational psychology including, but not limited to: selection and placement, appraisal,

motivation, productivity and job satisfaction, tests and measurement, group dynamics, and organization development and change.

Staff

Offered every year

225 HUMAN RESOURCE MANAGEMENT/ Lecture, Discussion

Covers the general areas of human resource management, to include job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO, OSHA requirements, manpower planning, and women in management.

Staff

Offered every year

226 INDUSTRIAL RELATIONS/ Lecture, Discussion

An introduction to the concepts, theory, and practice of labor-management relations. Topics covered include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations.

Staff

Offered every year

230 MARKETING MANAGEMENT/ Lecture, Discussion

Surveys the role of marketing in business and society, focusing on specific marketing activities. Topics include the marketing environment, marketing research and information systems, consumer behavior, the organizational consumer, products, pricing, distribution, promotion, international service, and nonprofit marketing. Prerequisites: Economics 10, 11 and Management 201 and 202.

Staff

Offered every year

231 MARKETING RESEARCH/ Lecture, Discussion

Marketing research focuses on consumer behavior and retail advertising. Topics include: primary and secondary data collection; questionnaires for attitude and awareness surveys, mail and phone surveys, personal interviews, focus groups, and data analysis techniques. Prerequisite: Management 230.

Staff

Offered every year

240 CORPORATE FINANCE/ Lecture, Discussion

A comprehensive study of financial decision-making from the perspective of the internal financial manager. Topics covered include valuation, loss of capital, capital structure, capital budgeting and financial analysis. Prerequisites: Economics 10, 11 and Management 201 and 202.

Staff

Offered every year

242 INVESTMENTS/ Lecture, Discussion

Covers investment principles, market behavior, and investment strategy. Investment principles include: portfolio selection, fundamental analysis, portfolio theory; debt instruments and money markets; the stock option market; and alternative investments. Prerequisite: Management 240.

Staff

Offered every year

250 OPERATIONS MANAGEMENT/ Lecture, Discussion

Surveys techniques in the area of model building and operations research. Emphasis is on topics oriented toward business forecasting as well as rational decision making by managers. Topics include forecasting, inventory control, system reliability, waiting-line theory, and assembly-line

balancing. Prerequisite: Economics 10, 11, 160, Management 201, Computer Science 101, and Math 11.

Staff

Offered every year

251 OPERATIONS RESEARCH/ Lecture, Discussion

Linear models, linear programming, the simplex method, sensitivity analysis, network analysis, and dynamic programming. This course is the equivalent of Mathematics 247.

Staff

Offered every year

260 BUSINESS POLICY/ Lecture, Discussion

This capstone-type course should be taken during the senior year. It focuses on those general management skills involved in choosing the strategy (or goals and purposes) of an organization and in committing critical resources to the organization's goals. The course integrates the major management functions, viewing the organization not only as an organic entity comprising a system in itself, but also affecting and affected by its environment. The method of instruction is case study. Prerequisites: Management 210, 230, 240 and 250.

Staff

Offered every year

262 BUSINESS ETHICS/ Lecture, Discussion

The social, political, technological, and ethical issues confronting the modern corporation make it necessary for the contemporary manager to develop a specific knowledge base and decision-making style in order to deal with complex situations. The course examines the relationship between organizations and the various environments in which they operate. Political, social, economic, and legal issues are considered, and the role of values and ethics in evaluating these environmental forces is analyzed. This course is the equivalent of Philosophy 133.

Staff

Offered every year

278 BUSINESS LAW/ Lecture, Discussion

Examines the legal framework within which American business operates. It is concerned with the various laws that determine the rights and obligations of persons taking part in business transactions. Emphasis is on those areas of the law commonly encountered by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. The goal is to provide students with a basis and understanding of the business and legal environment which will guide future management decisions and inquiry. There are assigned textual readings and class discussion of cases selected to illustrate these topics.

Staff

Offered every year

199 INTERNSHIP

Offered for variable credit.

299.9 INTERNSHIP: FIVE-YEAR PROGRAM

The five-year program requires a four-credit internship in the spring semester of the junior year.

Staff

THE GRADUATE M.B.A. PROGRAM

The M.B.A. Program has several unique features that should be evaluated by prospective students in light of their interests and preferences. The

M.B.A. Program is not solely committed to the study of business organizations. The faculty believes the study of management applies to all organizations, nonprofit as well as profit. Consequently, the theoretical core of each field of study is emphasized, and descriptive institutional material is used to particularize the core. The mix of students in the program, including current and future managers of educational, health, religious, government, and business organizations, forces the faculty to focus on the universal principles of managing. Graduate courses and seminars are scheduled in the late afternoons and evenings. These hours do not mean it is an evening program for part-time students, with a separate program in the daytime for full-time students. It is one program, with both part- and full-time students attending the same courses, seminars, and special projects. This aspect of the program contributes a unique atmosphere in which students learn from each other's wealth of different practical and academic experience.

The M.B.A. Program requires sixteen graduate credits for the degree, equivalent to four semesters of full-time graduate study. The sixteen credits are organized into four categories of course work and independent study (courses meet for fourteen weeks, three hours a week, unless otherwise indicated):

1) *Required Background Courses*—These courses are designed to introduce students to the fundamental language, concepts, and skills underlying the traditional or core functional fields of management. Students with previous course work or experience in these areas may elect to waive these courses by taking and passing waiver exams.

MBA 301, *Managerial Accounting and Finance*

MBA 302, *Quantitative Methods*

MBA 303, *Managerial Economics*

MBA 304, *Introduction to Management Information Systems*

2) *Required Core Management Courses*—These courses are intended to provide students with knowledge and skills in several important areas in Management.

MBA 310, *Organization Behavior*

MBA 330, *Marketing Management*

MBA 340, *Financial Management*

MBA 350, *Operations Management*

MBA 362, *Corporate Social Responsibility*

MBA 390, *Management Analysis and Communications*

3) As a capstone course for the M.B.A., *Business Policy* (MBA 360) or *Small Business Management* (MBA 361) is required.

4) *Electives*—These courses are designed to meet three objectives: They focus students more intensively on advanced topics in a particular functional area (e.g., marketing research), or they provide students an opportunity to integrate previous course work by applying their knowledge/skills to a particular problem area (e.g., research and development management), or they provide students an opportunity to explore important related topics in management (e.g., legal aspects of management).

5) *Optional Research Projects*—Students may engage in some form of faculty-supervised independent study in management in order to demonstrate their ability to apply management concepts and techniques to management problems. This research may take the form of empirical scientific studies, comprehensive case analyses, development of quantitative models (for example, for forecasting and inventory control), comprehensive review of previous work in some managerial area, or some other approved project.

Research must culminate with a major applied research project. The

independent research project can be counted as one credit toward the sixteen credit requirement for the M.B.A. degree. For more information, contact the program faculty.

COURSES

MBA 301 MANAGERIAL ACCOUNTING AND FINANCE/ Lecture, Discussion

Provides an understanding of accounting measurements and an appreciation of the ways in which managers use accounting data. Deals with concepts and tools of analysis necessary for the selection, quantification, and communication of business events through the accounting process.

Staff

Offered every semester

MBA 302 QUANTITATIVE METHODS/ Lecture, Discussion

An introduction to basic mathematical and statistical techniques used by management. Topics include: probability, statistical estimation and inference, error analysis, elementary decision theory, regression analysis, and optimization.

Staff

Offered every semester

MBA 303 MANAGERIAL ECONOMICS/ Lecture, Discussion

Designed to provide an overview of micro- and macro-economics, this course helps students gain a general understanding of economics as it affects, and can be influenced by, the manager. Examples of subject areas covered include monetary and fiscal policies, national income and product accounts, demand and cost analysis, pricing, theory of production, business cycles, and forecasting.

Staff

Offered every semester

THE CORE CURRICULUM

MBA 304 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS/ Lecture, Discussion

Presents business applications of computers from two viewpoints, one at the programming level and the other at the systems level. Programming topics include input and output, data representation and manipulation, program control, and subroutines. Systems topics include introduction to frameworks, management of information as a resource, integration of information systems into the organization, and data-base concepts.

Staff

Offered every semester

MBA 310 ORGANIZATION BEHAVIOR/ Lecture, Discussion

Designed to give students an opportunity to experience and investigate the relevancy to management of a series of topics based in psychology, social psychology, and sociology. The course explores the interaction between individuals and the systems in which they live and work, offering insight into the impact—on people and organizations—of individual differences, interpersonal interactions, group situations, and organization structures.

Staff

Offered every semester

MBA 330 MARKETING MANAGEMENT/ Lecture, Discussion

Surveys the role of marketing in its environment. Topics include: market targets and positioning; consumer behavior; product policy, pricing, dis-

tribution; promotion; international and industrial marketing; marketing of services. Text, readings, cases, and a term project supply experience in strategic market planning and management. Prerequisites: MBA 302 and 303.

Staff

Offered every semester

MBA 340 FINANCIAL MANAGEMENT/ Lecture, Discussion

An introductory study of financial decision making from the perspective of the internal financial manager. The major topics are the financing, investment, and dividend decisions of the firm. Prerequisites: MBA 301, 302, and 303.

Staff

Offered every semester

MBA 350 OPERATIONS MANAGEMENT/ Lecture, Discussion

Designed to study the techniques and models used in management decision making. Problems are analyzed to explore in-depth various aspects of these techniques and to emphasize their applications. Topics include: production design and process planning, layout of physical facilities, production standards and work methods, job evaluation, forecasting, inventory control, quality control, analytical methods in operations management, material requirements planning, research, and product development. Prerequisites: MBA 301, 302, 303, and 304.

Staff

Offered every semester

MBA 362 CORPORATE SOCIAL RESPONSIBILITY/ Lecture, Discussion

Managers must understand their environment to make effective decisions. This course focuses on the interaction between the manager and societal forces. Political, social, economic, and legal issues are considered, and the role of values and ethics in evaluating these environmental forces is analyzed. The primary method of instruction is case study. A paper and group presentations are required. The course integrates analytical skills developed in the basic and core courses. Prerequisites: MBA 310 and 330.

Staff

Offered every year

CAPSTONE COURSES

MBA 360 BUSINESS POLICY/ Lecture, Discussion

Focuses on those general management skills involved in choosing the strategy for achieving goals and purposes of organizations and in committing critical resources to those goals. The course integrates the major management functions, viewing the organization as an organic entity comprising a system in itself, which also affects, and is affected by, its environment. The method of instruction is case study. Prerequisites: MBA 310, 330, 340, and 350.

Staff

Offered every year

MBA 361 SMALL BUSINESS MANAGEMENT/ Lecture, Discussion

A survey of the particular problems involved in initiating and operating a small business, with special emphasis on the problems of market structure, finance, and productivity. Entrepreneurial organization and style are discussed relative to a growing and increasingly complex society. Case study and field research projects are the primary methods of instruction. Prerequisites: MBA 310, 330, 340, and 350.

Staff

Offered every year

MBA 390 MANAGEMENT ANALYSIS AND COMMUNICATIONS/

Lecture, Discussion

Develops skills in library research, critical thinking, deductive reasoning, and written communication; provides advanced learning in a content area; and offers practice and instruction in oral communication (presentation and meeting management). The course is structured around the writing of a research paper.

Staff

Offered every year

ELECTIVES

MBA 311 ORGANIZATION STRUCTURE AND PROCESS/ Lecture, Discussion

Studies issues relating to the interaction between organization structure and processes and individuals within organizations. The primary focus is on formal and informal organization. Constraints and opportunities presented by organizations are explored in depth. A combination of lectures, readings, and cases is used. The course is designed primarily around class discussions of cases used to develop analytical skills needed to solve organizational problems. Students are expected to prepare case analyses both individually and in groups. Prerequisite: MBA 310.

Staff

Offered every year

MBA 316 CAREER DEVELOPMENT/ Lecture, Discussion

Students survey major theories of career and adult development and apply those theories in a self-study. Prerequisite: MBA 310.

Staff

Offered every year

MBA 318 GROUP DYNAMICS/ Lecture, Discussion

A review of basic group behavior theory and concepts is followed by more detailed examination of groups as open systems. The class serves as a laboratory for observation and analysis and includes an intensive small group experience. Prerequisite: MBA 310.

Staff

Offered every year

MBA 320 ORGANIZATION DEVELOPMENT/ Lecture, Discussion

A survey of organization development concepts and techniques emphasizing applied behavioral science approaches toward (a) more effective management practices and (b) implementing changes in organizations. In addition to participating in in-class cases, lectures, and exercises, students are expected to meet weekly in work teams. Prerequisite: MBA 310.

Staff

Offered every year

MBA 322 CONSULTING STRATEGIES AND SKILLS/ Lecture, Discussion

Focuses on organization development change agent skills. Viewing the change agent as either an internal or external manager or consultant, the course utilizes a practical approach, in which students engage in and discuss "live" projects. The course involves reading, classroom exercises and discussion, and projects in the areas of organizational diagnosis and change, training design and implementation, and change agent skills. Prerequisites: MBA 318 and 320. MBA 318 may be taken concurrently.

Staff

Offered every year

MBA 325 PERSONNEL MANAGEMENT/ Lecture, Discussion

Explores the general areas of resource management, including job design, recruitment, management development, performance appraisal, counseling, labor relations and collective bargaining, wages and fringe benefits, EEO, OSHA requirements, manpower planning, and women in management. Prerequisite: MBA 310.

Staff Offered every year

MBA 326 INDUSTRIAL RELATIONS/ Lecture, Discussion

An introduction to the concepts, theory, and practice of labor-management relations. Topics covered include: the development of the trade union movement; the structure, practices, and outcomes of collective bargaining; the administration of the collective agreement; disputes resolution procedures; and the evolving public policy of labor relations. Prerequisite: MBA 325.

Staff Offered every year

MBA 328 COLLECTIVE BARGAINING/ Lecture, Discussion

An examination of the institution and process of collective bargaining. Topics include the evolution of bargaining, theories of bargaining power and behavior, and the relevant legislative framework. The range of bargaining issues is described along with the variations in bargaining units. The grievance procedure is examined in regard to its role in the application and interpretation of agreements.

Staff Offered every year

MBA 331 MARKETING RESEARCH/ Seminar

Focuses on defining marketing research problems, choosing appropriate data collection and analysis tools, and interpreting research results to determine implications for marketing strategy. Topics include: questionnaire design; sampling; mail and telephone surveys; focus groups and personal interviews; use of secondary data; regression, factor, discriminant, cluster and decision analyses; conjoint analysis and multidimensional scaling. Research project, written and oral reports, cases. Prerequisite: MBA 330.

Staff Offered every year

MBA 334 CONSUMER BEHAVIOR/ Seminar

Studies consumers as individuals and in groups. Topics include: complex decision-making models, habit, and low-involvement models; buying behavior of organizations. Term project, written and oral reports, cases. Prerequisite: MBA 330.

Staff Offered every year

MBA 335 INTERNATIONAL MARKETING/ Lecture, Discussion

Marketing across national boundaries and within selected national markets. Problems and decisions facing marketing managers in the international environment: products, pricing, and promotion necessary to coordinate a firm's international activities. Cases, readings, research projects. Prerequisite: MBA 330.

Staff Offered every year

MBA 336 MARKETING OF SERVICES/ Lecture, Discussion

Covers the special nature of marketing when the consumer creates the product at the level of consumption and without the opportunity to examine the product first. Service marketing depends heavily on the reputation

of the supplier, and upon location/convenience factors; the marketing mix must be adjusted to accommodate these characteristics. The differences between small and large business suppliers and those operating under regulation—such as utilities—are examined. Prerequisite: MBA 330.

Staff

Offered every year

MBA 337 INDUSTRIAL MARKETING/ Lecture, Discussion

Special marketing problems of industrial and other organizational customers including government. Designed for managers of marketing and allied functions such as research and development, engineering, production, purchasing, and corporate planning/strategy. Prerequisite: MBA 330.

Staff

Offered every year

MBA 338 ADVERTISING AND PROMOTION/ Lecture, Discussion

A management approach to the promotion component of the marketing mix. Topics include: print, broadcast, and other advertising; personal selling; sales promotion; publicity, public relations, and display. Field project, written and oral reports, cases. Prerequisite: MBA 330.

Staff

Offered every year

MBA 341 CORPORATE FINANCE/ Lecture, Discussion

A survey of recent developments in financial management. Theory, test of theory, and problems in practical implementation are discussed. Prerequisite: MBA 340.

Staff

Offered every year

MBA 342 INVESTMENTS/ Lecture, Discussion

Covers investment principles, market behavior and investment strategy. In addition to stocks and bonds, alternative investments, such as tax shelters and options, are discussed in light of risk-return analysis. Guest speakers from various sectors of the investment community present their views and discuss these with the class. Prerequisite: MBA 340.

Staff

Offered every year

MBA 343 ADVANCED MANAGERIAL ACCOUNTING/ Lecture, Discussion

Explains how accounting data, when utilized properly, can help solve problems that confront those directly responsible for the management of an enterprise. Topics on standard cost and budgeting involve behavioral characteristics that should be considered by the manager who determined the level of standards, the evaluation of variances, the preparation of budgets, and the use of budgets in control. Prerequisite: MBA 301.

Staff

Offered every year

MBA 344 FEDERAL TAX ACCOUNTING/ Lecture, Discussion

A basic course in the principles of federal income tax laws as they pertain to individuals, partnerships, and corporations. Explores the general rules and accounting principles required, emphasizing preparation of tax returns through specific problem analysis. Prerequisite: MBA 301.

Staff

Offered every year

MBA 345 INTERNATIONAL FINANCE/ Seminar

Focuses on specific problems encountered by financial managers in corporations with international financial functions. Topics include: foreign ex-

change risk, political risk, long-run investment and financing, working capital management, and financial control. Prerequisite: MBA 340.
Staff Offered every year

MBA 346 FINANCIAL INSTITUTIONS/ Seminar

Deals with an analysis of the role of banks and nonbank financial intermediaries in an advanced industrial economy. Attention is paid to the study of financial markets and institutions, the major financial intermediaries in the U.S. economy, the determination of interest rates, regulatory policy for financial institutions, and the impact of recent institutional and legislative changes on financial intermediaries. Prerequisite: MBA 340.
Staff Offered every year

MBA 347 MODERN PORTFOLIO THEORY/ Seminar

A course helpful to students interested in furthering their skills in investment management. Initially, the class covers the efficient markets hypothesis and utility theory. From this foundation, investment models are developed theoretically, and the necessary simplifications for implementation of the models are discussed. Students are required to apply the models through actual data. Prerequisite: MBA 340.
Staff Offered every year

MBA 348 COMPARATIVE ACCOUNTING/ Seminar

This course compares and contrasts accounting theory and practice, U.S. and foreign accounting systems, financial and managerial accounting, and internal and external auditing. The emphasis is on qualitative analysis rather than quantitative technique. The approach is liberal and interdisciplinary, exploring the linkages between the behavioral sciences and accounting. Prerequisite: MBA 301.
Staff Offered every year

MBA 351 OPERATIONS RESEARCH/ Seminar

A study of operations research techniques useful in business and management decision making, including: classical optimization, linear and integer programming, network models, dynamic programming, queuing theory, Markov processes, and simulation methods. Prerequisite: MBA 350.
Staff Offered every year

MBA 352 ADVANCED TOPICS IN MANAGEMENT INFORMATION SYSTEMS/ Seminar

A study of theoretical concepts and applications in the field of Management Information Systems (MIS). Specifically, problems, important issues, and recent trends are analyzed in depth to explore various technological as well as managerial aspects of MIS. Hands-on experience with some user-friendly packages as a decision-supporting tool is also emphasized. Topics include: the conceptual framework of MIS and Decision Support Systems (DSS), managerial/behavioral aspects, computer aspects including the concepts of database, user (manager) involvement in the system development life cycle. Prerequisite: MBA 302, MBA 304.
Staff Offered every year

MBA 354 RESEARCH AND DEVELOPMENT MANAGEMENT/ Seminar

Presents an overview of the characteristics unique to managing a research and development (R and D) unit as well as a general understanding of how

the R and D unit relates to the ongoing functioning of the entire organization (marketing, manufacturing, personnel, finance, corporate strategy, etc.). The course provides experiences in applying previously learned behavioral, economic, and managerial concepts and techniques to the design and management of R and D. Some of the topic areas covered in the course are: the economics of R and D, project selection and scheduling, productivity in the R and D setting, organization and management of R and D, information flows and communication patterns, interaction with other parts of the firm, and planning for R and D. Prerequisites: MBA 310 and 350.

Staff Offered every year

MBA 355 PRODUCTION MANAGEMENT/ Seminar

Focuses on the many complex decisions a production manager faces. Topics include: the design of forecasting, production planning, inventory control, and quality control systems, and how each of these systems is integrated into the firm as a whole. Cases and readings are used extensively. Prerequisite: MBA 350.

Staff Offered every year

MBA 366 THE GENERAL MANAGER/ Seminar

Focuses on actual applications of management concepts and techniques through the perspective of the general manager or chief executive officer of a business. The course features study and discussion of cases drawn from the experience of the class and of the instructor (who is a highly experienced senior executive), along with supplemental lectures and reading. Topics include: developing strategy, coupling strategy to actual operations, building and coaching cross-functional business teams, and stimulating productivity and quality of worklife improvement. Other topics, such as forecasting, production and inventory control, and information systems management, are selected based on the interests of the class. Prerequisites: MBA 301 and 310.

Staff Offered every year

MBA 372 WOMEN IN THE WORKPLACE/ Seminar

Topics include: attitude formation and change, prejudice and discrimination, stereotyping, assertiveness, career advancement, role stress, and power. The instructional format includes lectures, class discussions, cases, and exercises.

Staff Offered every year

MBA 376 SENIOR EXECUTIVE SEMINAR/ Seminar

M.B.A. candidates meet with presidents, chairpersons, CEOs, and senior corporate officers for an off-the-record, question-and-answer seminar. Executives come from a wide variety of organizations. The main thing they have in common is the experience and responsibility of making decisions that affect the future of their organizations. Typical discussions focus on the speakers' values and priorities; ways of thinking about different kinds of problems; attitudes toward their competitors, their industry, and people within their own organization; their personal assessment of the past and outlook on the future. Students chair the meetings, and prepare the briefing, and the de-briefing sessions. The seminar is run in a formal, business-like fashion. Enrollment is limited.

Staff

MBA 378 LEGAL ASPECTS OF MANAGEMENT/ Seminar

Examines the legal framework within which American business operates. The course is concerned with various laws that determine both the rights and obligations of persons taking part in business transactions. Emphasis is on those areas of the law commonly encountered by the business manager, such as contract negotiation and provisions, the Uniform Commercial Code, government regulations, consumer protection, and tort liability. Assigned readings and class discussion of selected cases illustrate these topics.

Staff

Offered every year

MBA 398 DIRECTED RESEARCH IN MANAGEMENT/ Seminar

Offered for variable credit.

Staff

Offered every year

MBA 399 DIRECTED READINGS IN MANAGEMENT/ Seminar

Offered for variable credit. Restricted to topics not covered by the curriculum. Permission of MBA program director required.

Staff

Offered every year

THE GRADUATE MASTER OF HEALTH ADMINISTRATION PROGRAM

The M.H.A. is a joint program offered in conjunction with the Department of Family and Community Medicine of the University of Massachusetts Medical School. The M.H.A. program combines the study of management and health, thereby reflecting the administrative and technological complexity of modern health systems.

Students may concentrate in either of two specific areas:

1) *health institution administration*—preparing students for careers or career advancement in such fields as hospital administration and health care administration.

2) *health systems planning and administration*—preparing students for careers or career advancement in such health agencies as health maintenance organizations, mental health agencies, industrial health programs, health planning agencies, and home health agencies.

The Clark/UMass program is oriented toward students with significant prior work experience in any health field, and nearly all of the students participating in the program are currently employed in health professions. The program will consider exceptionally qualified applicants with little or no experience in the health profession and will arrange a required field experience for those students.

Within the program's framework, students can design individual courses of study to meet their own needs, and individual counseling is available to students as they plan curriculum, internship, and field projects. In addition to background courses, core courses, and electives, a required field project develops problem-solving skills in a professional context.

The M.H.A. program requires sixteen graduate credits for the degree, equivalent to four semesters of full-time graduate study. The sixteen credits are organized into five categories of course work and independent study (courses meet for fourteen weeks, three hours a week, unless otherwise indicated):

1) *Three Required Background Courses*—These courses are designed to introduce students to the fundamental language, concepts, and skills un-

derlying the traditional or core functional management areas and provide a framework for health systems analysis.

Management 301, *Managerial Accounting*

Management 302, *Quantitative Methods*

MHA 320, *Health Systems*

Students with previous course work or experience in these areas may elect to waive these courses by passing a written or oral examination.

2) *Seven Required Core Courses*—These courses are intended to provide students with basic background knowledge and skills in several important areas in management and health systems.

MHA 310, *Organization Behavior*

MHA 330, *Epidemiology*

MHA 340, *Health Planning*

MHA 350, *Economic Aspects of the Medical Care Industry*

MHA 360, *Legal Aspects of Health Care Administration*

MHA 370, *Financial Management of Health Institutions*

MHA 380, *Health Systems and Institutions Policy Analysis*

3) *Two Courses Required in a Student's Area of Concentration*—Two areas of concentration are available: Health Institution Administration

MHA 390, *Management Information Systems for Health Administration*

Management 330, *Marketing Management*

Health Systems Planning and Administration

MHA 376, *Sociology of Health Care*

MHA 378, *The Human Ecology of Illness and Health Care*

4) *Three Electives*—These courses are designed to focus students more intensively on advanced topics in a particular functional area, or they provide students an opportunity to integrate previous course work by applying their knowledge/skills to a particular problem area, or they provide students an opportunity to explore important related topics in management and health systems.

MHA 341, *Hospital Planning*

MHA 381, *Case Studies in Health Administration*

MHA 382, *Case Studies in Hospital Administration*

MHA 383, *Health Promotion and Disease Prevention*

MHA 384, *Ethical Issues in Health Care Delivery*

MHA 385, *Ambulatory Care Planning and Administration*

MHA 370, *Information Processing Systems and Computer Programming*

MHA 374, *Information Management*

MHA 396, *Special Projects*

MHA 398, *Directed Research*

MHA 399, *Directed Readings*

5) *Applied Field Project*—independent study to demonstrate the student's ability to apply health administration concepts.

COURSES

BACKGROUND COURSES

MBA 301 MANAGERIAL ACCOUNTING

See course description under MBA listings.

MBA 302 QUANTITATIVE METHODS

See course description under MBA listings.

MHA 320 HEALTH SYSTEMS/ Lecture, Discussion

Examines various input-throughput-output models of health systems and discusses information necessary to understand the variety of components and linkages. The systems approach is used to identify key issues in various health service sectors, particularly primary care, hospital service, and high technology services. Discussions and student papers focus on key policy issues related to health systems in the United States and other countries.

Staff

Offered every year

REQUIRED CORE COURSES**MHA 310 ORGANIZATION BEHAVIOR IN HEALTH ADMINISTRATION/ Lecture, Discussion**

Focuses on understanding human behavior in the organization context with implications for effective management. Specific managerial techniques intended to improve the utilization and coordination of human resources in organizations are explored through case studies and exercises.

Staff Offered every year

MHA 330 PRINCIPLES OF EPIDEMIOLOGY/ Lecture, Discussion

Covers the basic principles and skills used by the epidemiologist to uncover and explain disease patterns in humans. Included are: description of disease by person, place, and time; principles of study design; analysis and interpretation of epidemiologic data. Emphasis is on practical application through examples from literature as well as student projects.

Staff

Offered every year

MHA 340 HEALTH PLANNING/ Lecture, Discussion

Examines health planning concepts and methods with considerable attention to their practice at the local, regional, state, and national level. Topics discussed include the history of health planning in the United States, health systems analysis, goal and priority setting, cost effectiveness studies, politics of health planning, plan implementation, and program evaluation. Analyses of actual health plans are included.

Staff

Offered every year

MHA 350 ECONOMIC ASPECTS OF THE MEDICAL CARE INDUSTRY/ Lecture, Discussion

Examines the economic aspects of the health services system in the United States in terms of production, distribution, and institutional structure. Topics discussed include determining demand for medical care, financing and delivery mechanisms and their effects, and the medical manpower market. The role of government planning and regulation of the medical care industry also is studied. Particular emphasis is given to economic analysis of the major alternative programs being proposed to restructure the American medical care system. No previous training in economics is necessary; economic concepts are explained as the course progresses.

Staff

Offered every year

MHA 360 LEGAL ASPECTS OF HEALTH CARE ADMINISTRATION/ Lecture,

Discussion Focuses on the study of the legal foundations, principles, and processes that influence the provision of individual and community health services. Consideration is given to the origins of health law, individual

and corporate liability, the physician/patient relationship, legal aspects of hospital administration, health legislative activities, and controversial medical/legal issues.

Staff Offered every year

MHA 370 FINANCIAL MANAGEMENT OF HEALTH INSTITUTIONS/

Lecture,

Discussion A comprehensive study of financial decision making in hospitals and other health care institutions. Topics covered include both the varied sources of financing and the efficient allocation of resources. The main format is the use of accounting data to implement economic models. Prerequisites: MBA 301, 302, and MHA 350.

Staff Offered every year

MHA 380 HEALTH SYSTEMS AND INSTITUTIONS POLICY ANALYSIS/ Seminar

A synthesis of background and core coursework using case studies that focus on multidisciplinary solutions to actual problems. About half of the case studies involve health system problems, and half refer to health institution problems. Prerequisites: MBA 301, 302, MHA 310, 320, 330, 340, 350, 360, 370.

Staff Offered every year

CORE COURSES (INSTITUTIONAL ADMINISTRATION CONCENTRATION)

MBA 330 MARKETING MANAGEMENT/ Lecture, Discussion

See course description under MBA listings.

MHA 390 MANAGEMENT INFORMATION SYSTEMS FOR HEALTH ADMINISTRATION/ Lecture, Discussion

Focuses on various issues a health care manager faces regarding management information systems. Topics include: conceptual foundations for information systems, managing and organizing the information services function, system implementation, the concept of decision support systems, use of financial planning models and other computer-based planning models, and some selected quantitative methods for health care. Research projects and hands-on computer experience are stressed.

Staff Offered every other year

CORE COURSES (HEALTH SYSTEMS PLANNING AND ADMINISTRATION CONCENTRATION)

MHA 376 SOCIOLOGY OF HEALTH CARE/ Seminar

Basic concepts in sociological analysis are applied to hospitals and other care facilities as social structures, to the social definition of illness, and to health behavior. Discussion of social movements and their implications for the future of health care delivery. Included in these discussions are the rise of technology vis-a-vis the therapeutic relationships and the growing tendency of individuals to take more responsibility for their own well-being (yoga, etc.) Students develop models for broadly conceived solutions to major problems in the American health care system.

Staff Offered every year

MHA 378 THE HUMAN ECOLOGY OF ILLNESS AND HEALTH CARE/
Lecture, Discussion

Emphasizes the interplay of psychological and environmental influences on health, illness associated behaviors, and the provision of health care services. Traditional medical perspectives are critiqued, and the possibilities of an ecological framework for examining health and health care issues are discussed.

Staff

Offered every year

ELECTIVES

MHA 341 HOSPITAL PLANNING/ Seminar

Examines input-output models of hospital systems and applies these models to problem identification, goal and objective setting, strategy development, and project evaluation. Also focuses on environmental factors influencing change in hospital systems. Actual hospital plans are analyzed.

Staff

Offered every year

MHA 381 CASE STUDIES IN HEALTH ADMINISTRATION/ Seminar

Focus is on hospital and multihospital systems. Cases relate to such topics as long-range facility planning, sharing hospital services, hospital responses to community needs, small hospital issues, hospital mergers, and multi-hospital systems. Students prepare written analyses of case studies for classroom discussion.

Staff

Offered every year

MHA 382 CASE STUDIES IN HOSPITAL ADMINISTRATION/ Seminar

Focus is on internal hospital problems and managerial responses; cases relate to personnel, equipment, inventory, financing, and policy issues in a variety of hospital types ranging from university teaching hospitals to small rural hospitals.

Staff

Offered every year

MHA 383 HEALTH PROMOTION AND DISEASE PREVENTION/
Seminar

Utilizes a natural history-of-disease framework to identify and evaluate prevention/promotion strategies. Among the primary prevention approaches examined are those addressing specific types of cancer, heart disease, substance abuse, mental illness, and infectious diseases. A broad range of screening services (secondary prevention) are also studied. Strategies are evaluated in terms of their effectiveness, costs, target population, resources, and service protocols. Student papers and presentations on specific health promotion and disease prevention programs are required.

Staff

Offered every year

MHA 384 ETHICAL ISSUES IN HEALTH CARE DELIVERY/ Seminar

A philosophical investigation of typical issues in medical ethics. These may include: psychosurgery, behavior modification and control, moral issues in research and human subjects, genetic testing and counseling, abortion, cloning and in-vitro fertilization, confidentiality and truth-telling, patients' rights, and allocation of scarce medical resources.

Staff

Offered every year

MHA 385 AMBULATORY CARE PLANNING AND ADMINISTRATION/ Seminar

Applies planning and administration concepts and methods to the variety of ambulatory care institutions, including freestanding health centers, HMOs, and hospital outpatient departments.

Staff

Offered every year

MPA 370 INFORMATION PROCESSING SYSTEMS AND COMPUTER PROGRAMMING/ Seminar

Utilizes the resources of the computer center to facilitate the acquisition of basic programming skills. Included in this course are the special application of programming skills and statistical packages in the administration of government and health care agencies.

Staff

Offered every year

MPA 374 INFORMATION MANAGEMENT/ Seminar

Uses basic programming skills as applied to the management of information in government and health care agencies. Students become familiar with computer applications for record keeping, interagency data sharing, and use of a data file for program evaluation.

Staff

Offered every year

MHA 396 SPECIAL PROJECTS

MHA 398 DIRECTED RESEARCH

MHA 399 DIRECTED READINGS

MHA 400 APPLIED FIELD PROJECT

Mathematics and Computer Science

DEPARTMENT FACULTY

John F. Kennison, Ph.D., *chair*: topology, category theory

Arthur Chou, Ph.D.: differential geometry

Edward Cline, Ph.D.: algebra, representation theory of algebraic groups

Jonathan Fine, Ph.D.: algebraic geometry

Roy Joshua, Ph.D.: algebraic geometry, algebraic topology, computer science

David Joyce, Ph.D.: algebraic topology, combinatorics, computer science

Robert W. Kilmoyer Jr., Ph.D.: algebra, representation theory of groups, artificial intelligence

Lawrence E. Morris, Ph.D.: automorphic representations, algebraic geometry

Michael St. Vincent, Ph.D.: dynamical systems, nonlinear oscillators

Evelyn Vaskas, Ph.D.: number theory

UNDERGRADUATE PROGRAM

The Mathematics Department serves four distinct areas in the University: the mathematical services facility is available for students interested

primarily in elementary mathematics. The department offers several courses of a general nature to meet the needs of students in all levels who are interested in mathematics as a discipline in itself or as a foundation for further study in other disciplines. The undergraduate mathematics major provides a number of different tracks, which introduce a student seriously interested in mathematics to this subject and to its applications. Finally, the department offers a major in computer science.

MATHEMATICAL SERVICES: A variety of elementary mathematical needs are met by the Math Clinic and Tutorial (Mathematics 10). Students work at their own pace and choose a program suited to their own needs. The course is not offered for credit.

Math 11, *Introduction to Mathematics*, reviews algebra, logarithms and exponentiation, and trigonometry. It serves as a precalculus course and as a course covering the material requisite for other 100-level math courses such as Math 113, *Linear Algebra* and Math 102, *Geometry*. Students may also use this course as a way to strengthen their background in high school mathematics.

GENERAL COURSES: Knowledge of calculus (beginning with Math 120, *Calculus*, Part I) is essential for any serious student of the natural sciences or mathematics. It also is used heavily in economics and has been applied extensively in other disciplines.

Math 120 is normally open to freshmen; however, students with a weak background are advised to take Math 11, *Introduction to Mathematics* first. A placement test is given during orientation week, and other diagnostic tests are available for students who are uncertain about which course to take. These placement tests are available at the department office. It is possible to omit Math 120 and Math 121, *Calculus*, Part I and Part II, and begin with Math 130, *Intermediate Calculus*, if sufficient achievement is shown on the advanced placement test given in high school. Students who achieve such advanced placement automatically receive credit for Math 120 and 121.

Students who want a survey course in computer science should take CS 100. This course was designed for students who want only one course in computer science. Students who have more interest in computer science should begin with CS 101, *Computer Programming I*, (which is prerequisite to all higher numbered computer science courses) to be followed by CS 102, *Computer Programming II*.

Linear Algebra, (Math 113) has many applications in the natural and social sciences, as does *Statistical Methods*, (Math 147). *Mathematical Models* (Math 147) discusses how mathematics is used in social sciences. *Linear Programming* (Math 119) includes applications to management.

Students who want to experience some of the beauty of mathematical reasoning at an elementary level might take Math 102, *Geometry*; Math 104, *Number Theory*; or Math 107, *Logic*.

The department offers several advanced courses in abstract mathematics, two of which are Math 213-214, *Modern Analysis*, and Math 225-226, *Modern Algebra*. These are intended for mathematics majors and others who have strong mathematics backgrounds, a taste for logically rigorous mathematics, and a willingness to work independently.

THE MAJORS IN MATHEMATICS AND COMPUTER SCIENCE

The department offers majors in computer science and in mathematics. The requirements for the various tracks have been changed from those described in the 1982-1984 Clark University Catalog. Students declaring a major after June 1, 1984, must satisfy the requirements listed below. Those

who declared before June 1, 1984, may satisfy either the old requirements or these new requirements. The department requires that courses within the major be taken on a graded basis.

THE COMPUTER SCIENCE MAJOR

The computer science major has been designed for the education of computer scientists who will also have a solid background in mathematics. The major has been broadened to allow students to concentrate in various fields in computer science. To encourage breadth, the department requires the student to do significant work in a minor area.

REQUIREMENTS FOR THE COMPUTER SCIENCE MAJOR

As of June 1, 1984, the requirements are: fourteen course units of computer science and mathematics including (1) a core of eight course units CS 101-102, *Computer Programming*; CS 140, *Assembly Language*; CS 160, *Data Structures and Algorithm Analysis*; Math 113, *Matrices and Linear Algebra*; Math 114, *Discrete Mathematics*; and Math 120-121, *Calculus, Parts I and II*; (2) a statistics course: either Math 147, *Statistical Methods* or Math 217-218, *Mathematical Statistics, Parts I and II*; (3) at least two units of 200-level courses; (4) a capstone to be worked out with an adviser. Note that CS 100, *Survey of Computing*, and Math 11, *Introduction to Mathematics*, are not allowed as credit for the fourteen courses required for the computer science major.

In addition, the department requires a four-course-unit minor in any subject. The minor may be selected from any department or program. Introductory courses for nonmajors are not to be counted in the minor. If the minor is chosen in mathematics, then eighteen units are required in computer science and mathematics, and four units of these must not be taken as part of the fulfillment of the major requirements described above.

SUGGESTED CONCENTRATIONS IN COMPUTER SCIENCE

There are several areas in computer science in which the student may wish to concentrate. Three of these are outlined below: software development, scientific computing, and theoretical computer science.

A concentration in software development would emphasize programming, software, and systems design with a solid background in mathematics. Here, the goal is to produce a sophisticated user of the computer who is able to apply his or her expertise in other areas. Hence, a minor should be chosen where there are extensive computer applications. A model program in software development might include the following courses:

Freshman	CS 101, Math 120-121
Sophomore	CS 102, CS 170, Math 113, Math 114
Junior	CS 103, CS 160, CS 203, Math 147
Senior	CS 140, CS 220, CS 250 (as the capstone)

Other courses of interest to students in software development are CS 155, CS 170, Math 164, Math 118, and Math 119.

A student concentrating in scientific computing would study mathematics (in particular, analysis) and its realization in computer algorithms as it applies to science. Appropriate courses include computer programming courses, applied mathematics courses, and courses in science. One of the sciences in which to apply this concentration should be chosen as a minor. A model program in scientific computing might include the following courses:

Freshman	CS 101, Math 120-121
Sophomore	CS 102, Math 113, Math 114

Junior CS 160, Math 164, Math 118, and a 100-level math course

Senior CS 140, Math 217-218, and a 200-level math course or reading course as a capstone

Other courses relevant to scientific computing are CS 145, CS 155, CS 170, Math 115, Math 119, Math 140, Math 213-214, Math 244, and Math 247.

Theoretical computer science is the formal study of the structures and problems that occur in computer science. This is essentially a mathematical approach to computer science. Students intending to go on to graduate school are advised to concentrate in theoretical computer science. An appropriate minor for this concentration is mathematics. A model program in theoretical computer science might include the following courses:

Freshman CS 101, Math 120-121

Sophomore CS 102, CS 140, Math 113

Junior CS 155, CS 160, Math 114

Senior CS 175, Math 217-218, and Math 225-226 as a capstone

Other courses of interest to students studying theoretical computer science are CS 100, CS 145, Math 164, Math 107, and Math 115.

THE MATHEMATICS MAJOR

There are programs in pure mathematics, applied mathematics, actuarial science, mathematics/management, and mathematics/ education. The objectives and requirements for these programs are outlined below. Although the following descriptions of each option are brief, we hope they indicate the nature of the program involved. We encourage students to call on the department for additional information.

PURE MATHEMATICS

The pure mathematics major at Clark is designed for two groups of students. The first group includes the liberal arts student interested in the broad spectrum of mathematical thought who does not wish to limit himself or herself to the more well-defined vocational objectives of the other majors. Such a student will find sufficient flexibility in the program to meet his or her needs. The second group consists of those students planning graduate work in mathematics.

The required courses for this major are listed below. Suggested elective courses in mathematics are Math 102, 104, 107, 115, 140, 213-214, 216, 255-226, and 244. Math 213-214, *Modern Analysis, Parts I and II*, and 225-226, *Modern Algebra Parts I and II* are highly recommended.

The pure mathematics major has a minor requirement. The objective is that the student be involved in a science to a sufficient depth to ensure that some of the uses of mathematics are illustrated. Each student takes four units in one of the science departments, at least one of which uses mathematics heavily. Introductory courses that are designed for nonmajors will not be counted toward the minor. Ordinarily, minors from chemistry, physics, and STS are acceptable without approval. Certain minors in other subjects such as economics, music, philosophy (related to the study of mathematical truth), computer science, and others are acceptable with departmental approval.

Each major has a culminating mathematical experience, which serves to give direction to his or her studies. This requirement is normally satisfied by an advanced course, either a reading course, or an advanced undergraduate course (making a total of three units of 200-level courses), or a graduate course. Alternatively, the requirement may be met by an honors project, work study, interdepartmental readings, or other such experi-

ences. Departmental approval for these alternative experiences should be obtained before the senior year.

REQUIREMENTS:

	Units
(a) Math 120-121, <i>Calculus, Parts I and II</i> ; 130-131, <i>Intermediate Calculus, Parts I and II</i> ; 113, <i>Matrices and Linear Algebra</i>	5
(b) Two units of 200-level math courses	2
(c) Three other mathematics courses	3
(d) Science minor	4
(e) Capstone	1
Total	15

APPLIED MATHEMATICS

The applied mathematics major is designed for students interested in the application of mathematics to natural or social science. The major emphasizes analysis for the physical sciences and probability and statistics for the life and social sciences. In addition to those students interested in the applied mathematics major (either alone or as a component of a dual major), it is hoped that the list of courses below will be useful to science students designing a minor in mathematics. It is strongly recommended that students interested in physical sciences take Math 216, *Introduction to Functions of a Complex Variable* and that those interested in life and social sciences take Math 217 and 218, *Mathematical Statistics, Parts I and II*. Students interested in graduate school should consider the other 200-level courses, especially Math 213-214, *Modern Analysis, Parts I and II*.

The minor requirement consists of a substantial sequence of courses in a mathematically oriented science. The requirement is five units that do not include introductory courses for nonmajors. Minors from chemistry, computer science, physics, and STS are acceptable without approval. Other fields are acceptable with departmental approval. The criterion for approval is that a large proportion of the minor courses involve the application of mathematical techniques.

REQUIREMENTS:

	Units
(a) Math 120-121, 130-131, 113, and either 140 or 244	6
(b) One 200-level math course, see recommendations above	1
(c) CS 101	1
(d) Two of Math 164, 118, 119, 143, any 200	2
(e) Natural or social science minor	5
Total	15

ACTUARIAL SCIENCE

Actuarial science could be described as the science of finance and insurance. Study in this field requires a firm grounding in mathematics followed by courses in statistics, economics, and business management.

Besides the required courses, additional courses in computer science, economics, and management are recommended to supplement to this major. Please consult with the department for further details regarding actuarial science.

REQUIREMENTS:

	Units
(a) Math 120-121, 130-131, 118, 143, 217-218	8
(b) CS 101	1
(c) Five of the following: Math 164, 113, 119, 247, CS 102, 103, Mgmt 201, 240, 250, Econ 10, 11, 121	5
Total	14

MATHEMATICS/MANAGEMENT

This track is essentially a mathematics major tailored for students with a strong interest in management or operations research. Its objective is to prepare the student for (1) a career in business management, (2) graduate study in operations research, or (3) graduate work in a business-administration program. Also, it has been designed as an undergraduate major for students in the five-year M.B.A. program. Courses of special interest in operations research are Math 113, 119, 164, and 247.

REQUIREMENTS:

	Units
(a) Math 120-121 Calculus	2
(b) A statistics course (such as Math 147, Econ 160, Math 217-218)	1
(c) Three of the following: Math 164, 113, 119, 130, 131, 143, 218, 247	3
(d) Two computer science courses to be chosen from: CS 101, CS 102, CS 103, CS 160, CS 203	2
(e) Three management courses including Mgmt 100	3
(f) Econ 10 and 11	2
Total	13

MATHEMATICS/EDUCATION

The mathematics/education program is designed for the student preparing to teach in secondary school. This program consists of a major in mathematics containing courses relevant to students' future needs in teaching and a minor in education. The education minor will lead to a certification in Massachusetts (interstate certification approval is pending). See the Education Department as early as possible for further details. There is a shortage of high school mathematics teachers and so there are scholarships, loans, and other inducements available to alleviate this shortage.

REQUIREMENTS:

- (a) Eight units of mathematics. Math 102, 113, 120-121, 147, and CS 101 are required. Math 217-218 may substitute for Math 147. The remaining courses may be chosen from Math 164, 104, 107, 130, 131, 147, any 200-level math course, and CS 102. All majors are required to take at least one unit of a 200-level math course.
- (b) The minor in education consists of six courses: a course in educational psychology, a course in methods of secondary school education, a course in philosophy of education, an introductory experience in secondary education, a course in methods of teaching mathematics, and student teaching.

MATHEMATICS/COMPUTER SCIENCE

The mathematics/CS track has been discontinued. Students who want to concentrate partially in mathematics and partially in computer science may

elect to major in pure mathematics (with a minor in computer science), applied mathematics (with a minor in computer science), or computer science (with a concentration in scientific computing or a concentration in theoretical science).

DECLARING A MAJOR AND CHOOSING A DEPARTMENTAL ADVISER

A student must declare his or her major no later than the end of the second semester, sophomore year. The registrar's office has "declaration of major" forms. At this time the student should choose a departmental adviser who will discuss majoring in computer science or one of the mathematics majors and who may sign the form. A departmental form is also to be filled out at this time and kept in the departmental office. The adviser may be any full-time, nonvisiting member of the department.

DEPARTMENTAL HONORS

Majors in computer science or mathematics who maintain at least a 3.2 average in courses required for their major may apply to the departmental honors program. Application in writing must be received by the end of the junior year by a prospective honors adviser or by the chair of the department. Honors may be achieved in one of two ways:

- (1) A unified four-course sequence as a senior (some parts of which may consist of readings courses), followed by a comprehensive examination.
- (2) An honors thesis to be presented at an oral defense or at a departmental seminar. This thesis may be an independent or joint research project or an analytic dissertation. Supporting coursework may be required. The student registers for CS or Math 299.8 for course credit for an honors thesis.

Upon satisfactory completion of the program the department may recommend graduation with honors, high honors, or highest honors.

GRADUATE PROGRAM

The department offers courses leading to the degrees of master of arts and doctor of philosophy in mathematics. The requirements for the M.A.* are: (1) ten full courses at least eight of which must be on the 300 level. These courses usually include one or two full courses of Mathematics 330—the writing of the master's thesis. They may include seminars and reading courses. (2) The basic courses, Mathematics 316, 318, and 325 must be included. Each of these requirements may be waived for a student presenting evidence satisfying the department of his or her knowledge of the material in question; (3) a master's thesis and (4) an oral examination.

A student working toward a Ph.D. degree and electing to omit the M.A. thesis and M.A. oral examination will be recommended for the M.A. degree upon successful completion of the Ph.D. preliminary examination.

The requirements for the Ph.D.* follow the general requirements of the graduate school. The Ph.D. preliminary examination is usually given orally, but may be written under certain circumstances. Students should consult with their advisers by November of their second year. Students entering with a master's degree should discuss the examination with a departmental adviser immediately. Failure to take this examination at the appropriate time may result in the department's not recommending a student for continued support. Scholarships, graduate instructorships, and new courses are subject to final approval by the Graduate Board.

The language requirement will be considered to have been fulfilled if the candidate can demonstrate sufficient linguistic ability to carry on effective

research in his or her field. The department's decision concerning this requirement will depend heavily upon the recommendation of the candidate's adviser.

*All candidates for the M.A. and Ph.D. degrees in Mathematics are required to serve as teaching assistants or as assistants in the computing center as part of the work for their degrees.

COMPUTER SCIENCE COURSES

CS 100 SURVEY OF COMPUTING/ Lecture, Laboratory

Directed toward the nonmathematically oriented student who wants a survey of computing and an understanding of computer programming. Students who may want to go on in computer science should take CS 101 instead. The concepts of variable and algorithm are introduced and illustrated in the BASIC computer language. These concepts are used in solving elementary problems via a computer. Small projects are chosen from various application areas. This course satisfies the formal analysis requirement of the Introductory Program. There are no prerequisites.

Mr. Fine, Mr. Mulcahy,
Mr. St. Vincent

Offered every semester

CS 101 COMPUTER PROGRAMMING I/ Lecture, Laboratory

An introduction to computer programming using the language PASCAL, a powerful general purpose, structured language. Development of algorithms and top-down design of programs. Topics through arrays, procedures and functions, and text files. Applications to business, data manipulation of both numerical and nonnumerical types, simulations involving games. Satisfies the formal analysis requirement. No prerequisites beyond high school algebra. This course is prerequisite to all higher numbered computer science courses.

Mr. Joshua, Mr. Joyce,
Mr. St. Vincent

Offered every semester

CS 102 COMPUTER PROGRAMMING II/ Lecture

A continuation of CS 101 covering topics such as string manipulation; files of records and their processing; dynamic data structures such as stacks, list, and queues; recursion; introduction to algorithm efficiency; internal searching and sorting. Projects involve larger programs that apply the above techniques primarily to nonnumerical problems. Prerequisite: CS 101.

Mr. Joshua, Mr. Joyce
Mr. Kilmoyer

Offered every semester

CS 103 INTRODUCTION TO COBOL PROGRAMMING/ Lecture

The concepts of COBOL, the most widely used programming language for business applications, are introduced. The student is expected to complete a number of programming assignments during the course. Prerequisites: CS 102 or permission of instructor.

Mr. Joshua

Offered every year

CS 115 COMPUTER SIMULATION LABORATORY

Refer to course description under Physics 115.

CS 117 MICROCOMPUTER LABORATORY

Refer to course description under Physics 117.

CS 140 ASSEMBLY LANGUAGE (VAX-11)/ Lecture

Fundamentals of assembly language programming in the VAX/MACRO language, a short discussion of VAX organization and architecture, data representation, the instruction set, addressing modes, machine code, macros, stacks, subroutines, linking MACRO procedures and higher-level language procedures, input and output, reentrancy, and recursion. As time permits: further topics relating to the design of an assembler and a macro processor, discussion of the linker. Prerequisite: CS 102.

Mr. Cline

Offered every year

CS 145 INTRODUCTION TO COMPUTER ORGANIZATION/ Lecture

A study of computer organization and logic design, this course is intended for students with a strong interest in computers and computing systems. It is especially recommended for students going on to graduate school in computer science. Topics include the structure and organization of the major components of computers, and the mechanics of information transfer and control within the system. The functional, logical level is emphasized rather than the circuit details of hardware. Prerequisite: CS 102.

Mr. Morris

Offered every other year

CS 155 OPERATING SYSTEMS/ Lecture

This advanced course studies the structure, performance, and design of operating systems. Topics include concurrency, deadlocks, scheduling, memory management. The abstract viewpoint is stressed rather than a specific operating system. Students design sections of operating systems. Prerequisite: CS 160.

Staff

Offered every other year

CS 160 DATA STRUCTURES AND ALGORITHM ANALYSIS/ Lecture

Data structures such as lists, trees, graphs, and hierarchical record structures are discussed along with the algorithms to implement them. The student learns to compare structures and to analyze algorithms for their efficiency. Topics include dynamic list processing, search/sort/merge methods, memory management, and hash coding. Prerequisites: CS 102 and Math 120.

Staff

Offered every year

CS 170 COMPARATIVE ANALYSIS OF PROGRAMMING LANGUAGES/ Lecture

Deals with the issues of design and implementation of programming languages from both a syntactic and a semantic point of view. Programming exercises in several languages are assigned to illustrate the run-time characteristics of the language and its special features such as list or string processing and amenability to structured programming techniques. Prerequisite: CS 102.

Mr. Kilmoyer

Offered every other year

CS 175 AUTOMATA, COMPUTABILITY, AND FORMAL LANGUAGES/ Lecture

The abstract ideas that are fundamental to computer science—"machine," "computation," and "language"—are studied in this course. Primarily a theoretical course, but it also has applications to computer programming languages and to linguistics. Topics include finite state machines, regular grammars and expressions, pushdown automata, context-free grammars and languages, precedence grammars, Turing machines, Church's thesis

and computable functions, unsolvable problems, introduction to computational complexity, and intractable problems. Prerequisite: CS 102 and Math 114.

Mr. Joyce

Offered every other year

CS 203 FILE PROCESSING/ Lecture

The advanced aspects of the language COBOL are used to introduce data structuring techniques and to survey the basic management information systems. Emphasis is given to attributes and utilization of sequential access and random access media and to file and index organization. The hierarchical and network approaches to databases are discussed. Prerequisite: CS 103.

Mr. Joyce

Offered every year

CS 220 DATABASE MANAGEMENT AND SYSTEMS DESIGN/ Lecture

An advanced course on the realities of database technology emphasizes the goals of database management: performance, data integrity, future compatibility, and versatility. The concept of data model is examined and a specific database is discussed. The student will design and implement a database management system that includes file security and query facilities. Prerequisite: CS 160.

Mr. Cline

Offered every year

CS 250 SOFTWARE DESIGN AND DEVELOPMENT/ Seminar

Students work in teams to organize, develop, and manage a major project in software design starting with a problem more or less vaguely defined, and proceeding to a concrete solution. The course provides a means for applying techniques learned in earlier classes and obtaining experience in system analysis. Prerequisite: CS 160.

Mr. Joshua

Offered every year

MATHEMATICS COURSES

Math 11 INTRODUCTION TO MATHEMATICS/ Lecture

Intended for students going on to calculus. Well-prepared students who pass the mathematics placement test may elect to take calculus without first completing Math 11. Topics included in this course are coordinate geometry, functions and their graphs, exponential and logarithmic functions, and trigonometry. Entering students should have a solid grasp of elementary algebra.

Mr. Cline, Mr. Kohler,
Mr. St. Vincent

Offered every semester

Math 102 GEOMETRY/ Lecture

Begins with a discussion of Euclidean geometry and quickly proceeds to modern related topics. Such topics may include Hilbert's axioms of geometry, the parallel postulate, hyperbolic (Lobachevskian) geometry, elliptic geometry, projective geometry, models of such geometries and philosophical implications of their existence, finite geometries, Klein's Erlanger Programme, and automorphism groups of geometries. One of the aims of this course is to show the beauty of the deductive approach in mathematics. Prerequisites: High school geometry and the equivalent of Math 11.

Mr. Joyce

Offered every other year

Math 104 THEORY OF NUMBERS/ Lecture

An introduction to number theory, this course also aims to train students to understand mathematical reasoning and learn to write proofs. Topics covered include the unique factorization of integers as products of primes, the Euclidean algorithm, congruencies, Fermat's theorem, and Euler's theorem (and some applications of the latter, e.g., magic squares). Prerequisite: equivalent of Math 11.

Ms. Vaskas

Offered every other year

Math 107 LOGIC/ Lecture

The propositional calculus and the first-order predicate calculus, which consist of a symbolic language and a method of proving statements made in that language, are constructed and discussed predominantly in relation to mathematical questions such as consistency and completeness.

Mr. Joyce

Offered every other year

Math 113 MATRICES AND LINEAR ALGEBRA/ Lecture

A study of the fundamental results and computational techniques of matrix algebra and vector spaces. Topics covered may include systems of linear equations, Gaussian elimination, matrix algebra, determinants, vector spaces, and linear transformations and applications. Also, the numerical analysis relevant to the fundamental computer algorithms related to this subject is discussed. Prerequisite: Math 11 or pass the math placement test.

Staff

Offered every year

Math 114 DISCRETE MATHEMATICS/ Lecture

Covers aspects of mathematics which often arise in computer science. Most topics are motivated by applications drawn from nonmathematical areas. Topics include modular arithmetic, Boolean algebra, switching circuits; languages and finite state machines; graphs, trees, flow in networks; codes, scrambled codes, Hamming metrics; finite fields; Latin squares; polynomial codes; elementary probability theory. Prerequisite: CS 101. Corequisite: CS 102 or Calculus.

Mr. Morris

Offered every year

Math 115 INTERMEDIATE LINEAR ALGEBRA/ Lecture

Continues the study of linear algebra initiated in Math 113. Topics may include eigenvectors and eigenvalues, canonical forms, bilinear forms, and applications. Again, the numerical analysis relevant to computer applications is discussed in this course. Prerequisite: Math 113.

Staff

Offered every other year

Math 118 ELEMENTARY NUMERICAL ANALYSIS/ Lecture

A one-semester introductory course in numerical analysis and the application of computers to the solution of certain numerical problems. Topics covered include interpolation, error analysis, and interactive methods. Prerequisites: Math 121 and CS 101, or permission of instructor.

Mr. Fine, Mr. Kennison

Offered every year

Math 119 LINEAR PROGRAMMING/ Lecture

Covers linear programming, its applications, and numerical algorithms. The simplex method, the theory of duality, and several of the methods used in more specialized problems such as the transportation problem,

network flow problems, and the assignment problem may be included. The linear algebra necessary is covered in the course.

Mr. Kennison

Offered every other year

Math 120 and 121 INTRODUCTION TO CALCULUS, PARTS 1 and 2/ Lecture, Discussion

Topics in part one include functions, limits, derivatives, techniques of differentiation, continuity, related-rates problems, maximum-minimum problems, definition of integration, and the fundamental theorem of calculus. Part two includes further study of integration and the study of series. Calculus is essential for majors in biology, chemistry, computer science, mathematics, physics, and STS. Math 120 fulfills the formal analysis requirement. Prerequisite: Math 11 or a passing grade on the mathematics placement test.

Mr. Cline, Mr. Joshua,

Each part offered every semester

Mr. St. Vincent, Ms. Vaskas

Math 130 and 131 INTERMEDIATE CALCULUS, PARTS 1 and 2/ Lecture

Assumes the knowledge of one-variable calculus and deals with functions of several variables. Topics covered include partial derivatives, line and surface integration, and sequences and series. Applications of these topics to complex analysis, vector analysis, and Fourier analysis are considered. Pre-requisite: Math 121.

Ms. Vaskas

Offered every year

Math 140 ELEMENTARY DIFFERENTIAL EQUATIONS/ Lecture

An introduction to elementary techniques and concepts for solving and applying differential equations. The equations discussed appear in biology, economics, the physical sciences, and other fields. They give mathematical models describing exponential growth with bound, vibrating strings, planetary motion, and other similar situations. Corequisite: Math 130.

Ms. Vaskas

Offered every other year

Math 143 ACTUARIAL SCIENCE/ Lecture

Deals with the mathematics of finance and its applications. Compound interest, life contingencies, and population theory are among the topics covered. The course is designed to introduce the student to the material covered by the third and fourth (F.S.A.) actuarial exams. Prerequisite: Math 121 or permission of the instructor.

Mr. Chou

Offered every other year

Math 147 STATISTICAL METHODS FOR COMPUTER SCIENCE/ Lecture

Aim is to model those random phenomena that arise naturally in computer science. After the basic concepts of probability and statistics are introduced, applications are made to algorithm analysis, storage requirements, and user systems. Prerequisites: CS 101 and Math 120.

Mr. Morris

Offered every year

Math 164 MATHEMATICAL MODELS/ Lecture

Of interest to students who want to understand more closely the relation between mathematics and the sciences. Mathematical models come in two types: deterministic and nondeterministic. The deterministic models em-

ploy methods from algebra, axiomatics, linear algebra, calculus, and differential equations. The nondeterministic models employ probability, statistics, and linear algebra. Rather than focusing on methods, the course discusses critically some very interesting applications taken from social and life sciences. These applications require less technical background than the classical models in physics and engineering. Prerequisites: Math 120 and CS 101. (Formerly Math 100).

Mr. Kilmoyer

Offered every other year

Math 213 and 214 MODERN ANALYSIS, PARTS I and II/ Lecture

Topological and metric methods are introduced and studied. These generalize and explain many ideas first encountered in calculus. These methods will be applied to study differentiation, integration, and convergence, among other topics, in greater depth. Prerequisite: Math 131 or permission of instructor. (Formerly 214a and 214b)

Mr. Morris

Offered every other year

Math 216 INTRODUCTION TO FUNCTIONS OF A COMPLEX VARIABLE/ Lecture

An introductory course designed for undergraduate science majors as well as mathematics majors. Cauchy's theorem, power series, Laurent series, the residue theorem, harmonic functions, and physical applications, such as problems in two dimensional flow, are among the topics to be covered. The object is to convey understanding of the classical theorems of complex analysis as opposed to rigorous proofs of their most general statements. Prerequisite: Math 131 or permission of instructor.

Mr. St. Vincent

Offered every other year

Math 217 and 218 MATHEMATICAL STATISTICS, PARTS I and II/ Lecture

Designed to introduce students to the theory and applications of probability and statistics. Techniques used to solve problems are stressed along with the associated mathematical theory. Among the topics covered are combinatorial methods, postulates of probability, stochastic processes, probability densities, mathematical expectation, sampling distributions, estimation, hypothesis testing, regression, and correlation. The syllabus for this course includes most of the material recommended for those preparing for the second (F.S.A.) actuarial examination. Prerequisite: Math 121. (Previously listed as Math 217a and 217b)

Mr. Morris

Offered every year

Math 225 and 226 MODERN ALGEBRA, PARTS I and II/ Lecture

The theory of groups, rings, fields, integral domains, canonical forms, and related topics. The treatment is axiomatic with emphasis on the construction of the proofs of certain theorems. Prerequisite: Math 113 or permission of instructor. (Formerly Math 215a and 215b)

Mr. Kilmoyer

Offered every other year

Math 228 and 229 INTRODUCTION TO TOPOLOGY, PARTS I and II/ Lecture

Point set topology, metrization theorems, and extension theorems are covered during part I. In part II, algebraic topology, a branch of mathematics that studies properties of solids and surfaces under continuous deformation (i.e., the geometry of rubber sheets), is introduced. Topics in

homotopy and homology theory are covered. Prerequisite: Math 131. (Previously listed as Math 218a and 218b)

Staff

Not offered on a regular basis

Math 244 DIFFERENTIAL EQUATIONS/ Lecture

First order and linear differential equations are covered. Various methods of solution are stressed, i.e., series, integrating factors, variation of parameters, etc. An introduction to partial differential equations and boundary value problems is discussed, with some applications to fluid and thermal dynamics. Prerequisite: Math 131.

Mr. Joshua

Offered every other year

Math 245 APPLIED MATHEMATICS/ Lecture

The development of orthogonal functions, Fourier series, Legendre polynomials, and Bessel functions and their use in solving heat conduction and vibration problems, and the Laplace transform. Corequisite: Math 130 or 131.

Staff

Not offered on a regular basis

Math 247 OPERATIONS RESEARCH/ Lecture

Operations research is the application of mathematical methods to the management of organized industrial, commercial, governmental, and military systems. Techniques discussed in this course may include linear models, linear programming, the simplex method, sensitivity analysis, network analysis, and dynamic programming. Prerequisites: Math 121 and 113.

Staff

Not offered on a regular basis

GRADUATE COURSES IN MATHEMATICS

For more information on the graduate courses listed below, please contact the department.

300 SET THEORY

316 FUNCTIONS OF A COMPLEX VARIABLE

318 FUNCTIONS OF A REAL VARIABLE

321 ALGEBRAIC TOPOLOGY

325 ADVANCED MODERN ALGEBRA

326 SELECTED TOPICS IN COMPLEX ANALYSIS

327 FUNCTIONAL ANALYSIS

330 MASTER'S THESIS

335 SELECTED TOPICS IN ALGEBRA

341 DIFFERENTIAL EQUATIONS

358 CATEGORY THEORY

376 REPRESENTATION THEORY OF FINITE GROUPS

381 SEMINAR IN COMPLEX VARIABLES

382 SEMINAR IN ABSTRACT ANALYSIS

Music

See Department of Visual and Performing Arts.

Philosophy

DEPARTMENT FACULTY

- Gary E. Overvold, Ph.D., *chair*: philosophy of social science, epistemology, contemporary continental philosophy, inter-disciplinary studies
Patrick G. Derr, Ph.D.: philosophy of science, medical ethics, history of modern European philosophy, metaphysics
Christina Hoff-Somers, Ph.D.: history of ethics, history of philosophy, contemporary moral theory, philosophy of literature
Peter Lipton, B. Phil.: philosophy of science, epistemology, logic, philosophy of language
Daniel C. Shartin, Ph.D.: ancient philosophy, philosophy of biology, logic, metaphysics
Kristin B. Waters, Ph.D.: ethics, social and political philosophy, history of philosophy, women's studies
Walter E. Wright, Ph.D.: nineteenth-century philosophy, ethics, philosophy of religion, German idealism

UNDERGRADUATE PROGRAM

The Philosophy Department offers both a traditional major program and a variety of elective courses which can enhance the student's critical skills and intellectual breadth. Some of these can be used to fulfill Program in Liberal Studies requirements. Others are special electives designed to complement the studies of students in certain other major programs or with particular preprofessional interests (for example, 133, 149, 241).

Students who want to minor in philosophy are encouraged to take an introductory course (102 is recommended), a course in the history of philosophy (121 and 123 are recommended), and at least two advanced courses (200). The advanced courses should be selected to complement the student's academic major and career interests.

The requirements for a major in philosophy include one course in logic (101 or 160); two courses in the history of philosophy (121, 122, 123, or 125); one advanced course in the area of ethics (220-229, 270); one advanced course in the area of metaphysics (230-239, 263) one advanced course in the area of epistemology (240-249, 287); and the Capstone Seminar in Philosophy (298). In all, a minimum of eight courses in philosophy are required for the major. In addition each student majoring in philosophy is required to demonstrate competence in another academic area by either (i) completing the requirements for a double major or (ii) completing a set of six related courses including at least four above the introductory level in other departments.

For students who are motivated to undertake significant independent research, the department offers a Senior Thesis Program (299) and a variety of Advanced Topics in Philosophy courses (297). Students interested in these possibilities should consult with individual members of the philosophy faculty.

Honors, High Honors, or Highest Honors in philosophy may be conferred at graduation upon majors who, in addition to having compiled a

superior record in their major studies, successfully complete a senior thesis and an oral thesis defense.

Students who would like more information about the courses, programs, and faculty of the Philosophy Department at Clark University are invited to pick up a copy of the handbook, *A Students' Guide to Philosophy at Clark*, which is available in the department office.

THE CENTER FOR PHILOSOPHY AND PUBLIC AFFAIRS

The Clark University Department of Philosophy houses the New England chapter of the Society for Philosophy and Public Affairs. SPPA is a national organization that works to promote the application of philosophical methods and insights to the consideration of such public issues as medical ethics, criminal justice, civil disobedience, pornography and censorship, economic justice, and affirmative action. The center sponsors frequent colloquia, symposia, and conferences on public policy issues. Inquiries concerning its activities may be directed to the department.

IDEALISTIC STUDIES

The international philosophical journal *Idealistic Studies* is edited by Walter Wright with the assistance of the other faculty of the Department of Philosophy. Founded by Robert N. Beck, *Idealistic Studies* has become one of the world's leading professional journals for the discussion and analysis of themes and problems arising within the context of the idealist tradition in philosophy.

THE PHILOSOPHY CLUB

Students interested in philosophy and philosophical dialogue, whether majors in the department or not, are invited to join the Philosophy Club. This student-led organization meets regularly with invited speakers and faculty to discuss topics chosen by its members. Information on the club is available from the department.

COURSE NUMBERS AND LEVELS

<i>Numbers</i>	<i>Level</i>
100-109	Introductory courses for all students; no prerequisites.
120-129	Survey courses in the history of philosophy (at least two are required for the major); usually no prerequisites.
130-139	Courses in applied ethics for all students; no prerequisites.
140-199	Intermediate courses in various areas of philosophy; usually one prerequisite.
200-219	Advanced courses in the major systematic and historical areas of philosophy; usually two prerequisites.
220-229	Advanced courses in systematic ethics; two prerequisites.
230-239	Advanced courses in systematic metaphysics; two prerequisites.
240-249	Advanced courses in systematic epistemology; two prerequisites.
250-279	Seminars on individual philosophers or philosophical issues; two or more prerequisites.
280-289	Special seminars which may be taken for graduate credit by students in certain other departments; usually four or more prerequisites (plus permission) for undergraduates.
290-299	Advanced topics, individual research, senior thesis, capstone seminar, and other small, intensive courses in philosophy; usually four to six prerequisites.

INTRODUCTORY COURSES

101 INTRODUCTION TO LOGIC/ *Lecture, Discussion*

An introduction to logic as both a practical skill and a branch of philosophy. The student is introduced to the principles, methods, and philosophical foundations of logical reasoning.

Mr. Overvold, Mr. Shartin

Offered every year

102 INTRODUCTION TO PHILOSOPHY/ *Lecture, Discussion*

An introduction to philosophy through the study of typical problems drawn from its main branches. Topics often include God's existence, the nature of morality, scepticism, freedom vs. determinism, immortality, and political theory. Readings are taken from both classic and contemporary sources. Frequently team-taught by the entire department.

Mr. Derr, Ms. Hoff

Offered every semester

Mr. Lipton, Mr. Overvold

Mr. Shartin, Mr. Wright

103 ANALYTIC REASONING/ *Lecture, Discussion*

Major emphasis is given to the analysis of argumentative essays (drawn from newspapers, philosophical works, legal journals, and popular magazines) on such topics as affirmative action, the problem of evil, the nature of law, scientific method, etc. We analyze the material with an eye to its cogency and persuasiveness, identifying its premises and conclusions, assumptions and implications. The course helps students to read, write, and think in a more analytical and critical manner.

Mr. Lipton, Mr. Overvold,

Offered every semester

Mr. Shartin, Ms. Waters

105 PERSONAL VALUES/ *Lecture, Discussion*

A philosophical study of some fundamental human problems: Is there a God? Why should we be moral? Should we permit or choose abortion, mercy killing, or suicide? Do communities have a right to ban pornography? Can civil disobedience, war, or terrorism be morally justified? What moral issues are at stake in truthfulness, sexual integrity, and love? The student learn some important moral theories and the methods used to reason philosophically about moral questions.

Ms. Hoff, Ms. Waters, Mr. Wright

Offered every semester

INTERMEDIATE COURSES

121 HISTORY OF ANCIENT PHILOSOPHY/ *Lecture, Discussion*

Examines the origins of Western philosophical thought in early Greece, with special emphasis on the Pre-Socratics, Plato, and Aristotle. We consider the classical theories of man, society, and nature which were developed and which provided the background for subsequent philosophical and scientific thought.

Mr. Shartin

Offered every year

122 HISTORY OF MEDIEVAL PHILOSOPHY/ *Lecture, Discussion*

Students study the major Jewish, Islamic, and Christian philosophers of the medieval period. Special attention is typically given to Maimonides, Averroes, Aquinas, and Ockham. Typical issues covered include the relation of faith and reason, the nature of universals, the basis of political theory.

Mr. Shartin

Offered every other year

123 HISTORY OF MODERN EUROPEAN PHILOSOPHY/ Lecture, Discussion

The two great movements in modern Western thought—continental rationalism and British empiricism—will be examined from their common origin in Descartes, through their later articulations by Locke, Berkeley, Spinoza, Leibniz, and Hume, to their eventual transformation by Immanuel Kant. Particular emphasis is given to the interaction of philosophy and science and to the powerful influence exerted by the modern European thinkers upon contemporary thought.

Mr. Derr

Offered every year

125 HISTORY OF CONTEMPORARY PHILOSOPHY/ Lecture, Discussion

A survey of the major trends in recent anglo-American and continental philosophy: pragmatism, logical positivism, ordinary language philosophy, hermeneutics, critical theory, and phenomenology. Each alternative is considered as a coherent perspective on experience, with special attention given to its style and methodology. Prerequisite: one course in philosophy.

Mr. Overvold, Ms. Waters

Offered every year

130 MEDICAL ETHICS/ Lecture, Discussion

An investigation of contemporary issues in medical ethics: informed consent, definitions of death, treatment termination and euthanasia, abortion, confidentiality and truth-telling, behavior modification and control, genetic testing and counseling, research on human subjects, the allocation of scarce medical resources, in-vitro fertilization, and national health policy. Not open to Freshmen.

Mr. Derr

Offered every year

132 SOCIAL AND POLITICAL ETHICS/ Lecture, Discussion

Typical issues include: What are the duties of officials when conscience and constituency conflict? Can political violence or "dirty tricks" be morally justified? Are moral principles of fairness and honesty relevant to political campaigning and democratic electioneering? Should morality be legislated? Should anything else be legislated?

Ms. Waters

Offered every other year

133 BUSINESS ETHICS/ Lecture, Discussion

Investigates moral problems in and about the world of business: Do corporations have moral responsibilities, or is their only social responsibility to increase profits? Is capitalism morally justifiable, or is some other politico-economic system morally preferable? Also discusses ethical issues in advertising, affirmative action and business's responsibilities toward the environment.

Ms. Hoff, Mr. Shartin

Offered every semester

134 AGING, DEATH AND SOCIETY/ Lecture, Discussion

Considers moral issues in gerontology: What does society owe to its older members? How ought we to resolve conflicts between the interests of the old and the young? What do adult children owe to their adult parents? What is aging: a disease, a maturation? Is it a bad thing? Are there really life stages? How does it feel to grow old? "What is death?"

Ms. Hoff

Offered every other year

136 LEGAL ETHICS/ Lecture, Discussion

Considers a variety of ethical problems that arise within and about the law and the legal system: the relation of law and morality, issues in professional ethics, the social responsibilities of lawyers and judges, questions about the nature of justice, and so forth.

Ms. Waters

Offered every other year

139 WOMEN AND PHILOSOPHY/ Lecture, Discussion

Attention is given to the prevalent images of women in the history of Western philosophical thinking, including the tradition's general misogyny and the glimmerings of feminism in Mill, Wollstonecraft, and others. The course also looks at issues in contemporary philosophy that particularly affect women, including debates about sexual differences, the meaning of liberation, and the status of feminism as a social ideal.

Ms. Waters

Offered every other year

140 SCIENCE, SOCIETY, AND THE SEARCH FOR TRUTH/ Seminar

An intensive investigation into the origins, development, and significance of a major natural scientific theory. Attention is given to both the "internal" scientific context and the "external" social and cultural context. Readings include original scientific literature as well as contemporary historical and philosophical analyses. This course is team-taught with Mr. Andersen of the Physics Department. Topics vary by year, but include Maxwell's electromagnetic theory (1984 academic year) and the Copernican Revolution in astronomy (1985 academic year).

Mr. Derr

Offered every year

145 EXISTENTIALISM/ Lecture, Discussion

Considers the major nineteenth- and twentieth-century existentialists, with special attention given to the questions of personal responsibility and authenticity, the meaning of death, and the death (or existence) of God. Prerequisite: one course in philosophy.

Ms. Hoff

Offered every other year

149 AESTHETICS/ Lecture, Discussion

Why did Plato condemn artists and their work? Can art really be as neatly categorized as Aristotle claims? Is art "experience," "emotion," or something else altogether—as suggested by Dewey, Croce, and Santayana? Among the theories of art that we will consider are those of Arnheim, Sartre, Langer, Fischer, Collingwood, and Nietzsche. Prerequisite: one course in philosophy.

Mr. Anderson, Ms. Waters

Offered every year

150 PHILOSOPHY OF RELIGION/ Lecture, Discussion

Considers the nature of religion as revealed by the examination of representative forms of religious experience. Emphasis is given to the effect of contemporary knowledge on our understanding of religion and religious experience. Prerequisite: one course in philosophy.

Mr. Wright

Offered every year

154 RECENT CONTINENTAL PHILOSOPHY/ Lecture, Discussion

Introduces three contemporary European philosophical movements: hermeneutics, critical theory, and structuralism. Prerequisite: one course in philosophy.

Mr. Overvold

Offered every other year

160 SYMBOLIC LOGIC/ Lecture, Discussion

Emphasis is on formal principles of deductive rigor with some consideration of the philosophical implications of logic. Topics include: sentential calculus, predicate calculus, Tarski's definition of truth, selected metatheorems, and Henkin's completeness proof for the first order predicate calculus.

Mr. Shartin, Mr. Wright

Offered every year

ADVANCED COURSES**212 PHILOSOPHY OF LANGUAGE/ Lecture, Discussion**

An analysis of the concepts of reference, meaning, analyticity, intentionality, intensionality, rules, and the relation of language to thought. Particular attention is given to the speech act approach (Austin, Grice, Strawson, Searle) and to the implications of language theory for the social sciences (Ricoeur, Louch). Prerequisite: two courses in philosophy.

Mr. Lipton, Mr. Shartin

Offered every other year

215 KANT AND THE NINETEENTH CENTURY/ Lecture, Discussion

Examines the work of Kant and selected later philosophers (Fichte, Hegel, Schopenhauer, Nietzsche, Marx, Engels, and Comte) with a special emphasis on their influence on contemporary thought. Prerequisite: two courses in philosophy, preferably including 123.

Mr. Wright

Offered every other year

220 THEORIES OF ETHICS/ Lecture, Discussion

Examines the principal ethical theories from the history of Western philosophy, including the answers given by philosophers such as Plato, Aristotle, St. Augustine, St. Thomas Aquinas, Hobbes, Hume, Kant, and Mill to the questions: What is "the Good?" How can it be realized in society and in one's personal life? Are our moral judgments objective? Why should we be moral? Prerequisite: two courses in philosophy.

Ms. Hoff, Ms. Waters

Offered every year

221 SOCIAL AND POLITICAL PHILOSOPHY/ Lecture, Discussion

Surveys the leading philosophical accounts of social and political institutions, including social contract theory, anarchism, socialism, democratic capitalism, and communism. Property, civil and natural rights, freedom and obligations, and the legitimation of political authority are treated in detail. Readings include both classical and contemporary sources. Prerequisite: two courses in philosophy.

Ms. Waters

Offered every other year

234 METAPHYSICS/ Lecture, Discussion

An advanced survey of fundamental problems in metaphysics: universals, substance, the mind/body relation, category theory, identity and individuation, and the nature of space and time. Prerequisite: two courses in philosophy.

Mr. Derr, Mr. Shartin

Offered every year

235 CONCEPTS OF SELF/ Lecture, Discussion

Considers the various philosophical concepts of the "self" that have been developed by classic and contemporary philosophers. Typical thinkers whose views may be covered include Aristotle, Plato, Descartes, Kant,

Heidegger, Sartre, Kierkegaard, Strawson, and Stevenson. Prerequisite: two courses in philosophy.

Ms. Hoff, Mr. Wright

Offered every other year

240 EPISTEMOLOGY/ Lecture, Discussion

The study of the nature and sources of knowledge, with special attention to the interrelationships among belief, knowledge, evidence, proof, truth, and the problem of scepticism. Prerequisite: two courses in philosophy.

Mr. Overvold, Ms. Waters

Offered every year

241 PHILOSOPHY OF SCIENCE/ Lecture, Discussion

Examines such questions as: What is a scientific explanation? Can induction be justified? What grounds the claim that one theory is better than another? Are there such things as objective "facts?" Do scientific theories disclose the ultimate constituents of the universe? Special attention is given to the views of Hempel, Popper, Kuhn, Lakatos, Feyerabend, and Hesse. Prerequisite: four courses in natural sciences or two courses in philosophy.

Mr. Derr, Mr. Lipton

Offered every year

250 PLATO/ Seminar

An advanced investigation of the major philosophical dialogues of Plato. Typical selections include the Republic, Theaetetus, Sophis, Statesman, Parmenides, Euthyphro, Phaedrus, and Meno. Prerequisites: two courses in philosophy, including 121.

Mr. Anderson, Mr. Shartin

Offered every other year

251 ARISTOTLE/ Seminar

An advanced investigation of some central parts of the philosophical system of Aristotle. Among the works examined may be the *Categories*, *On Interpretation*, *Prior Analytics*, *Posterior Analytics*, *Physics*, *De Anima*, *Metaphysics*, *Nichomachean Ethics*, *Politics*, and *Poetics*. Prerequisites: two courses in philosophy, including 121.

Mr. Shartin

Offered every other year

256 KANT/ Seminar

Students are introduced to Kant's *Critique of Pure Reason*—regarded by many as the most important philosophical text of the last several hundred years. Prerequisite: two courses in philosophy, including 123.

Ms. Waters

Offered every other year

257 HEGEL/ Seminar

Hegel's *The Phenomenology of Mind* and selections from his other works. Prerequisites: at least two courses in philosophy, preferably including 123.

Mr. Wright

Offered every other year

259 HEIDEGGER/ Seminar

Heidegger's *Being and Time* together with selections from *Kant and the Problem of Metaphysics*, *What is Thinking?*, and other works. Prerequisite: three courses in philosophy.

Mr. Overvold

Offered every other year

260 CASSIRER/ Seminar

The philosophical works of Ernst Cassirer, concentrating especially upon *The Philosophy of Symbolic Forms* and *The Logic of the Humanities*. Prerequisite: two courses in philosophy.

Mr. Kaplan

Offered every other year

263 PHILOSOPHY OF MIND/ Seminar

A critical examination of the "nature" or concept of mind. Related issues to be considered are: mind/body relationship, the identity theory of mind/brain, the thesis of dualism, and other themes that involve the philosophical examination of psychological phenomena. Prerequisite: two courses in philosophy.

Mr. Overvold, Mr. Shartin

Offered every other year

264 PHILOSOPHY OF BIOLOGY/ Seminar

Examines such issues as: the structure of evolutionary theory (including the claim, by critics, that it is circular); the role of teleology in biological science; the status of taxonomies; and the reduction of biological theories (e.g., Mendelian genetics) to physical and chemical theories (e.g., molecular biology). Prerequisites: four courses in biology or two courses in philosophy.

Mr. Shartin

Offered every other year

270 PHILOSOPHY OF LAW/ Seminar

Is law "natural," "God-given," or "an artificial contrivance of man?" What is the purpose of law? Is there a theory of law which can explain rights, duties, liability, responsibility, punishment, and so forth? Is judicial reasoning random or subservient to some set of principles? What is the connection between law and the moral concept of justice? Prerequisite: two courses in philosophy.

Ms. Waters

Offered every other year

272 CONCEPTS OF THE HUMAN BEING/ Seminar

Considers some of the answers philosophers have given to the Psalmist's question, "What is Man?" What kind of thing is a human being? What is a "person?" Also considers the problem of defining the moral community. Prerequisite: three courses in philosophy.

Mr. Derr, Ms. Hoff

Offered every other year

275 PHENOMENOLOGY/ Seminar

An intensive study of two representatives of contemporary phenomenology: Edmund Husserl and Maurice Merleau-Ponty. Some consideration is given to other major philosophers within the tradition and to the historical context of the phenomenological movement in general. Prerequisite: at least three courses in philosophy.

Mr. Overvold

Offered every other year

287 PHILOSOPHY OF THE SOCIAL SCIENCES/ Seminar

A critical and intensive survey of the four alternative accounts of explanation, social reality, and social science put forward by the neopositivist empiricists, the phenomenologists, the neo-Wittgensteinians, and the continental hermeneuticists and critical theorists. Prerequisite: at least four courses in philosophy or graduate status in a social science.

Team taught by Mr. Derr
and Mr. Overvold

Offered every other year

288 ETHICAL AND PHILOSOPHICAL ISSUES IN RISK ASSESSMENT AND HAZARDS MANAGEMENT/ Seminar

An intensive study of the conceptual and methodological problems involved in defining and measuring risk, of some central philosophical principles of morality and distributive justice, and of the special methods by which such principles can be applied to policy problems regarding the management of complex technological hazards. Cases studied vary by year; in 1985 they will be radioactive waste management and the allocation of risks between workers and publics. Prerequisites: four courses in philosophy or advanced standing in a relevant physical or social science.

Mr. Derr

Offered every other year

297 ADVANCED TOPICS IN PHILOSOPHY/ Individual Projects

Offers group discussion, individual tutorials, and independent research in areas of philosophy. The independent research involves a topic of each student's choice within the designated area. Prerequisite: where appropriate, completion of regular department course(s) in the area; four courses in philosophy; and permission of instructor. Offerings vary each semester. Recent topics have included medieval Jewish philosophy, philosophical issues in logic, explanation in psychology, social welfare theory, and Aristotle's category theory.

Staff

Offered every semester

298 CAPSTONE SEMINAR IN PHILOSOPHY

This seminar is required for completion of the major in philosophy. Its theme, chosen in consultation with participating students, is a central philosophical issue around which the students' previous philosophical studies can be integrated. Responsibility for the conduct and presentation of research on the theme is shared equally by the students and the department faculty. At least two members of the philosophy faculty are normally involved in the seminar. Prerequisite: at least six courses in philosophy. Coordinated enrollment in Philosophy 299 (Senior Thesis) is recommended but not required.

Mr. Derr, Ms. Hoff, Mr. Lipton

Offered every year

Mr. Overvold, Mr. Shartin,

Ms. Waters, Mr. Wright

299 SENIOR THESIS/ Individual Project

Students undertake an advanced individual study of a selected philosophical problem. The prerequisites, all of which must be fulfilled no later than the middle of the preceding semester, are: (1) permission of the department, which is usually granted only to majors with an academic record of at least B in the major; (2) prior completion of at least six courses in philosophy; and (3) submission and approval of a thesis proposal. The thesis proposal must describe the nature and scope of the proposed project, provide a bibliography of the principal sources the student expects to use, include a schedule for submission of first and final drafts to the adviser and department, and be signed by the student's thesis adviser. Upon completion of the thesis, the department faculty schedule an oral defense for the student. Variable credit.

Staff

Offered every semester

Physics

DEPARTMENT FACULTY

Harvey Gould, Ph.D., *chair*: theoretical condensed matter physics

Roy S. Andersen, Ph.D.: electron spin resonance, radiation damage

Gary S. Collins, Ph.D.: experimental condensed matter physics, defects in metals

John Davies, Ph.D.: theoretical plasma physics

Robert L. Goble, Ph.D.: technology assessment, atmospheric physics and turbulence

Christoph Hohenemser, Ph.D.: experimental condensed matter physics, technology assessment

Roger P. Kohin, Ph.D.: experimental condensed matter physics

Christopher P. Landee, Ph.D.: experimental condensed matter physics, magnetochemistry

ADJUNCT FACULTY

Sharon Nicholson, Ph.D.

AFFILIATED FACULTY

Michael Klein, Ph.D.

Edward L. O'Neill, Ph.D.

Van Blumel, Ph.D.

UNDERGRADUATE PROGRAM

Physics is the study of the material world. Physicists seek to discover and apply the universal principles that underlie a broad range of physical phenomena. The guiding rule for the physicist is simplicity since the physicist knows from experience that the most successful ideas are those that have the simplest structure and the widest range of applicability. Some systems, such as an atom or nucleus, have been found to be intrinsically simple since their behavior can be described and understood in terms of a small number of physical variables. Other systems, such as a smoke ring, might require the enumeration of a large number of variables for their description. Nevertheless, for these systems, the physicist tries to devise simple, idealized models which make analysis tractable yet preserve the essential properties of each system.

The department offers a variety of courses that reflect the diverse subject matter and applications of physics. Many courses are introductory in nature and are appropriate for undergraduates with little or no prior experience with physics or university-level mathematics. The introductory courses can be grouped as follows:

(1) *Scientific Perspective Courses*. Physics 100, 103, 104, 130, and Astronomy 1 are suitable for students with no college mathematics background and have no prerequisites. They satisfy the *scientific perspective* requirement of the Program of Liberal Studies. These courses emphasize the historical, philosophical, and aesthetic dimensions of physics and are designed to impart a degree of literacy in physics. Additional courses, Physics 105, 110, 111, 112, and 115, also satisfy the *scientific perspective* requirement but are intended for prospective science students.

(2) *Introductory Laboratory Courses*. The department offers undergraduates a variety of laboratory courses with few or no prerequisites. Included are Physics 115, 117, 118, 119, 128, and 132. They are concerned with computer simulation, microcomputers, optics, electronics, biological physics, and

alternative energy studies respectively, and they are taught independently of any lecture course. Typically they involve two discussion periods and one laboratory period per week. Physics 118, 119, 128, and 132 also fulfill the physics laboratory requirement for premedical/pre dental students.

(3) *Introductory Physics Courses.* Prospective science majors are strongly encouraged to study physics during their freshman or sophomore years since the understanding of the natural sciences requires a knowledge of the basic principles of physics. The department offers two distinct sequences of introductory courses. Physics 110 and 111 form a two-semester, noncalculus-based survey of physics appropriate for the majority of science majors, environment, technology and society (ETS) majors, and premedical students. Physics 105, 112, and 113 form a three-semester calculus-based survey of physics recommended for physics majors, as well as chemistry and mathematics majors. The 105, 112, 113 sequence covers mechanics, electricity and magnetism, quantum physics, and relativity in more depth than the 110, 111 sequence, thereby giving better preparation for advanced work. Physics 105 has a seminar format and covers topics of current research interest in addition to most of the material treated in Physics 110. Physics 112 treats many of the topics covered in Physics 111 in greater depth. Since Physics 112 is less comprehensive, it should be followed by Physics 113.

In addition to the courses listed above, the department offers upper-level and graduate courses. Students wanting further information about physics offerings beyond the catalogue descriptions are invited to contact the course instructors or the undergraduate physics adviser.

THE MAJOR

Prospective physics majors are urged to enroll in Physics 105 and 112 in their freshman year and to consult the undergraduate physics adviser about their individual programs of study. Minimum requirements for graduation with a degree in physics, are fourteen courses of a common curriculum and four additional approved courses in physics or related areas. The common curriculum is taken by all physics majors and encompasses in-depth studies of mechanics, electricity and magnetism, and quantum and thermal physics. The common curriculum includes ten courses in physics and four courses in calculus.

To provide intellectual breadth in physics beyond the foundations of knowledge learned in the common curriculum, majors must also complete an individual program of four additional semesters in physics or related areas. Each individual program should be chosen in consultation with the undergraduate physics adviser. All majors are encouraged to design a program that suits their particular needs and interests. Several possible examples of individual programs might be classified as follows:

General physics — a program appropriate for students who wish to major in physics as part of a liberal arts education but who do not intend to pursue graduate study or a career of research in physics.

Preprofessional physics — a program of advanced courses in physics, chemistry, and mathematics to prepare the student for graduate study in physics or research in industry.

Atmospheric physics — a specialization in atmospheric studies including climatology and meteorology courses offered by the Physics and the Geography Departments.

Biological physics — a program including chemistry and biology courses which could be used as preparation for entrance to medical or dental schools or for careers in the biomedical professions.

Technology assessment — a program of interdisciplinary courses to enable students to make physical, economic, and value assessments of technological systems.

Courses in the major program:

	UNITS
(1) <i>Introductory physics: Physics 105 or 110 and Physics 112 or 111</i> (105 and 112 are recommended)	2
(2) <i>Intermediate-level physics: Physics 113 and 123</i>	2
(3) <i>Calculus: Mathematics 120, 121, 130, and 131</i>	4
(4) <i>Laboratory courses: Physics 119 and 114</i>	2
(5) <i>Upper-level courses: Physics 174, 161, and 176</i>	3
(6) <i>Senior project: Physics 231 or equivalent</i>	1
TOTAL IN COMMON CURRICULUM	14
(7) <i>Additional approved electives</i>	4
TOTAL IN MAJOR PROGRAM	18

Students with strong backgrounds in physics and mathematics may replace required courses with appropriate advanced courses, as approved by the departmental undergraduate adviser. Students with advanced placement credits may count them towards their major requirements. It is possible to complete all requirements for the major within three years, so that it is not essential to begin the study of physics in the freshman year. The Physics Department offers *Introductory Physics*, 110 and 111, every semester, so that students can begin studies at any time. All majors are expected to confer with the undergraduate adviser prior to preregistration to plan courses for the following semester and to ensure that all requirements for graduation are being satisfied.

Information about career opportunities after graduation, as well as further information about courses and major requirements can be found in the booklet *Physics at Clark* published by the department. Copies can be obtained in the department office or from the undergraduate adviser.

THE CAPSTONE EXPERIENCE

An independent research project is the most appropriate capstone experience for physics majors. The required capstone course is normally one semester of Physics 231, *Special Projects in Physics I*, or an approved course of comparable scope. Near the end of the junior year, the major should arrange a topic for his or her senior project in consultation with department faculty members. Work is conducted under the guidance of a faculty member, often with the assistance of graduate students engaged in research. It is the intention of the faculty to design projects that lead to publication in refereed physics journals. Majors with a special interest in research, particularly preprofessional majors, are urged to enroll in more than one semester of Physics 231-233. Research opportunities in the department are listed in the University publication *Undergraduate Research Opportunities*, and in the departmental booklet *Physics at Clark*.

HONORS

Students can apply for departmental honors in recognition of meritorious academic standards and research creativity. An honors candidate must maintain an overall B- average. All eligible majors are encouraged to participate in the honors program.

Honors candidates are expected to conduct a research project under guidance of a faculty member during the junior or senior years. A thesis describing the work must be submitted to the faculty no later than April 1

of the senior year and defended orally in a special departmental colloquium about two weeks later. Recommendation for honors in physics is made on the basis of the quality of the thesis and student performance in the defense. Students may gain credit for thesis research by registering for Physics 231, 232, and 233. Interested majors are urged to consult with faculty members early in order to choose an appropriate research topic.

GRADUATE PROGRAM

The department offers the master of arts and doctor of philosophy degrees in physics. Departmental research is concentrated in experimental and theoretical studies of condensed matter including magnetic critical phenomena, magnetic and optical properties of solids, defects in solids, and cluster-aggregation problems. Other research areas include radiation damage studies on biological materials, applied physics, theoretical plasma physics, and interdisciplinary studies of risk assessment and energy technology.

The academic requirements of the graduate program are flexible, with emphasis on early student participation in research and informal student evaluation. A distinctive part of each student's course work is Physics 303, a "research apprenticeship" course, which introduces the student to research in several different research groups at the earliest possible time.

Beginning graduate students must take a placement examination, which tests their knowledge of undergraduate physics. Students failing this examination may be required to take undergraduate courses before entering fully into the graduate program, and they may be asked to fulfill the requirements of the M.A. before proceeding to the Ph.D.

To receive the M.A. degree, students must satisfy the general University residence and course requirements, pass with a grade of B- or better, four units of the basic graduate courses — Physics 301, 302, 305, 306, 309, and 310 — one unit of Physics 303, and pass two oral examinations in the subject matter of the basic graduate courses. In contrast to M.A. physics programs at many other universities, M.A. candidates must also complete a thesis based on original research.

To receive the Ph.D. students must, in addition to University residence and course requirements, pass with a grade of B or better the basic graduate courses Physics 301, 302, 305, 306, 309, and 310 and two units of Physics 303. The department does not rely on a formal written qualifying examination to evaluate student readiness for Ph.D. research. Instead, students must pass four oral examinations that stress qualitative as well as quantitative aspects of the subject matter of the basic graduate courses. Students must also pass at least one graduate course in a subject other than physics, demonstrate literacy in a foreign language and computer programming, and complete a dissertation based on original research. Students entering with advanced standing and transferable credit are encouraged to demonstrate proficiency in the basic graduate courses through oral examinations.

Graduate students in both the M.A. and Ph.D. programs are required to obtain supervised teaching experience either as teaching assistants or teaching fellows in the department, or elsewhere if approved by the department.

Further information on research interests of the faculty and research opportunities for graduate students can be found in the departmental brochure *Graduate Study and Research in Physics at Clark*. Copies are available upon request from the graduate student adviser.

Application forms for admission and financial aid may be requested.

from the chair of the department. During the academic year, financial support is available in the form of tuition remissions, teaching assistantships, and research assistantships. The department considers the financial support of its graduate students an important responsibility.

COURSES

One course in Astronomy is offered by the department:

1 EXPLORING THE UNIVERSE

This course is explicitly designed for the nonscience major who wishes to learn about the stars. It is also intended to provide for the interests of the student who seeks an acquaintance with the concepts and methods of science but who does not wish to go into the depth of the typical introductory science survey course. Topics considered are interdisciplinary in character since astronomy involves physics, chemistry, biology, and geology. The use of mathematics is minimized; only simple algebra is utilized. Half of the course is devoted to consideration of the planets and the sun. In the other half of the course, the stars, their life cycles, and the galaxies are studied. Theories of the composition and origin of the solar system, of the universe, and of life are explored. The heavens are best understood by having students make direct observations of celestial objects. Emphasis is, therefore, placed on the making, analyzing, and reporting of observations on the moon, sun, planets, meteors, stars, variable stars, nebulae, and galaxies. Students make these observations using telescopes in the University observatory as well as on several night field trips.

Mr. Andersen

Offered every fall

100 EINSTEIN AND HIS IDEAS

Introduces students with no special preparation or competence in mathematics and science to the contributions of Einstein to contemporary physics. Much of the course is devoted to a systematic development of Einstein's special theory of relativity and its profound implications for our conception of space and time. The remainder of the course introduces Einstein's general theory of relativity in which the effects of gravity are described in terms of the curvature of space, Einstein's role in the development of quantum mechanics, and his involvement in political and humanitarian causes. Throughout the course we seek to gain insight into Einstein as a person and into the nature of the creative process. This course satisfies either the *formal analysis* or the *scientific perspective* requirement in the Program of Liberal Studies.

Mr. Gould

Offered every year

103 IDEAS OF QUANTUM PHYSICS

Introduces students to the conceptual foundation of the quantum theory of matter. Discusses the experimental evidence for the failure of classical theory, the properties of electrons and photons, wave particle duality, the Heisenberg uncertainty principle and the theory of measurements, the statistical interpretation of quantum mechanics, the complementarity principle, and the meaning of determinism and causality in quantum physics. Particular attention is given to various paradoxes in the interpretation of quantum mechanics and the fundamental objections raised by Einstein and others in its interpretation. The development of the theory is qualitative and utilizes only elementary algebra to simplify and clarify and pre-

sentation. The course is open to all students and satisfies the scientific perspective requirement in the Program of Liberal Studies.

Mr. Kohin

Offered every other year

104 THE NATURE OF PHYSICAL SCIENCE

Examines two fundamental and important questions: "What is natural science?" and "How do natural scientists view the natural world?" Answers to these questions are sought using a case studies approach involving one of the great revolutions in physics: Copernicus and the solar system, Bohr and the structure of the atom, or Maxwell and electromagnetic radiation are typical examples. About two-thirds of the course involves a historical study of the underlying scientific discoveries which led to the formulation of the new theory. Such a study allows the student to understand the complexity of the questions scientists must consider in evaluating and explaining observational data. The remaining third of the course considers contemporary philosophical ideas on the nature of science. The course is open to all students, involves no mathematics, and has no prerequisites. It satisfies the scientific perspective requirement of the Program of Liberal Studies.

Mr. Andersen, Mr. Derr

Not offered on a regular basis

105 SEMINAR IN CONTEMPORARY PHYSICS

A first course in university-level physics designed to introduce and motivate students to the study of physics at an advanced level. Subject matter varies from year to year, but contemporary topics taken from fields such as astrophysics, elementary particle, statistical, quantum, and solid state physics are emphasized. Traditional topics including the conservation laws and particle dynamics (including relativistic dynamics) are introduced as needed. Both traditional and contemporary topics are illustrated by selected laboratory experiments. Several faculty participate in the course. Offered on a credit/no-record basis only; it does not satisfy the requirement of premedical/predental students for an introductory physics course. The course satisfies the *scientific perspective* requirement in the Program of Liberal Studies. Students intending to enroll in Physics 105 must pass a placement examination which tests high school-level mathematical achievement.

Staff

Offered every fall

110 INTRODUCTORY PHYSICS - PART I

An introductory-level, problem-oriented course for science majors and general students desiring a survey of physics. The course stresses the simplicity and self-consistency of physical models in explaining a variety of physical phenomena. Topics discussed include Newtonian mechanics, wave motion, and an introduction to the thermal properties of matter. Calculus is not required although elements of calculus are introduced during the course. The course may be followed by either Physics 111 or 112 depending on the particular goals of the student. Together with Physics 111 and a laboratory course it fulfills the usual entrance requirements for medical and dental schools. The course satisfies the *scientific perspective* requirement of the Program of Liberal Studies. There are three lectures and one discussion section per week.

Mr. Andersen, Mr. Davies,
Mr. Kohin, Mr. Landee

Offered every semester

111 INTRODUCTORY PHYSICS - PART II

A continuation of Physics 110. Includes electricity, magnetism, optics, relativity, atomic and nuclear physics. Students who do not intend to take a second year of physics should enroll in this course in preference to Physics 112. It has three lectures and one discussion section each week.

Mr. Andersen, Mr. Davies,

Offered every semester

Mr. Kohin, Mr. Landee

112 CLASSICAL PHYSICS

A continuation of Physics 105 or 110 for students wanting a more complete introduction to physics. Topics, which include electricity, magnetism, light and optics, are explored in greater depth than in Physics 111. Physics 112 is the recommended second-semester course for physics, mathematics, and other science majors who intend to continue with *Quantum Physics*, Physics 113. Two 75-minute lectures and one tutorial session per week. Credit is not given for both Physics 111 and 112. The course requires permission of the instructor for entry. Corequisite: Mathematics 121.

Mr. Collins

Offered every spring

113 QUANTUM PHYSICS

The third semester of a three-semester survey of physics, normally intended to follow Physics 112. Topics covered include quantization of physical variables such as charge, mass, energy, and angular momentum; the wave and particle duality of radiation and matter; and Bohr theory of the hydrogen atom. The description of a system in terms of wave-function is introduced, and it is shown how measurements of properties of the system correspond to mathematical operations on the wavefunction. Physics 113 also covers relativity physics, which is needed to help understand phenomena on an atomic scale. Two 75-minute lectures and one tutorial meeting per week. Prerequisite: Physics 112 or permission of the instructor.

Mr. Collins

Offered every fall

114 QUANTUM PHYSICS LABORATORY

Offers laboratory experience with simple systems exhibiting quantum and relativistic phenomena and serves as an introduction to research-level nuclear science instrumentation. Experiments include X-ray activation analysis, mass-spectroscopy with relativistic electrons, lifetime measurements of cosmic ray muons, gamma-gamma coincidence measurements, positron annihilation, and Compton and Rutherford scattering. Two discussion classes, one recitation, and about five hours of self-scheduled laboratory work per week. Prerequisite: Physics 113 and 119.

Mr. Hohenemser

Offered every spring

115 COMPUTER SIMULATION LABORATORY

Introduces students to the essential features of computer simulation and its diverse applications. Project oriented, with students proceeding at their own pace depending on background and interests. Projects involve the simulation of dynamical systems such as the harmonic oscillator, the two-body problem, and simple random systems. Methods include the numerical solution of simple differential equations and Monte Carlo techniques. No background in computer programming is necessary. It is recommended that prospective physics majors complete this course early in their career so that they can use the computer more effectively in their advanced courses. Two lecture discussions and one scheduled laboratory per week. Satisfies the *scientific perspective* requirement of the Program of Liberal

Studies. Prerequisites: Physics 105 or 110, Mathematics 120, or permission of the instructor.

Mr. Gould, Mr. Kohin

Offered every year

117 MICROCOMPUTER LABORATORY

Provides the background and skills necessary to interface microcomputers with measurement and control processes. In the lectures the students learn about the internal architecture of the microcomputer and the principles of interfacing the computer to physical apparatus. In the laboratories students gain practical experience in the fundamentals of digital electronic circuits and interfacing techniques and will complete an individual project to adapt the microcomputer to a specific measurement or control application. No background in electronics or computer programming is necessary. Two lectures and one laboratory meeting per week.

Mr. Andersen

Offered every year

118 OPTICAL PROJECTS LABORATORY

An introductory laboratory covering the principles, applications, and techniques of modern optics. Projects treat imaging and photographic techniques, basic optical instruments including the microscope, lasers and holograms, optical communication using fiber optics, and interaction of light with matter. This course is of interest to biology, geography, and psychology majors, as well as to physics and chemistry majors. It satisfies the physics laboratory requirement for premedical and pre dental students. Two tutorial sessions and one laboratory per week. Prerequisite: Physics 110.

Mr. Kohin

Offered every year

119 ELECTRONICS LABORATORY

An introductory laboratory course designed to teach the principles of modern electrical measurement and control. Basic skills such as the fundamentals of DC and AC circuit theory and use of test instruments such as multimeters and the oscilloscope are taught. Emphasis is given to operational amplifiers and digital circuits. The course satisfies the physics laboratory requirement for premedical/pre dental students. Two lectures and one laboratory each week. No prerequisites other than high school algebra.

Mr. Landee

Offered every year

123 STATISTICAL AND THERMAL PHYSICS

Introduces the concepts and techniques of statistical and thermal physics including statistical mechanics, thermodynamics, and kinetic theory. The overall goal is to understand the behavior of macroscopic systems in terms of their basis in atomic theory. Topics treated include entropy and the second law of thermodynamics, the Boltzmann probability distribution, the thermodynamics of an ideal gas and of an ideal paramagnet, heat and work, and first and second law efficiencies of simple engines. Prerequisite: Physics 113; corequisite: Mathematics 131.

Mr. Gould, Mr. Kohin

Offered every year

128 BIOLOGICAL PHYSICS LABORATORY

Designed to introduce students in the biological sciences and premedical/pre dental students to the important physical principles underlying biological systems. Experiments employ electrical, optical, and nuclear methods to the study of biological systems. The course satisfies the physics labora-

tory requirement for premedical/predental students. One lecture and one laboratory meeting per week.

Mr. Andersen

Not offered on a regular basis

130 ENERGY SOURCES AND SYSTEMS

An introduction to the subject of energy for ETS majors and others interested in the utilization of fossil fuels, solar and wind power, geothermal energy, and nuclear fission and fusion. Emphasis is placed on basic concepts, thermodynamic principles, efficiency of use, and methods of converting both energy and energy resources from one form to another. The course provides the necessary background for those planning more detailed study of energy technology and/or policy, and also satisfies the prerequisite for ETS 132, Alternative Energy Systems Laboratory.

Mr. Davies

Offered every other year

131 SOLAR ENERGY

This is a critical survey of existing and proposed methods of utilizing solar energy. Topics include a history of solar energy applications, the use of solar energy for space and water heating, the limitations imposed by thermodynamic laws and economic costs, and an analysis of methods of producing work from solar energy (e.g., solar heat engines, wind, solar cells, ocean thermal gradients, biological methods, etc.). No particular background in physical science beyond high school physics or chemistry is needed. Students will be asked to analyze and evaluate simple systems quantitatively and will become familiar with experimental solar devices now at Clark.

Mr. Davies

Offered every other year

132 ALTERNATIVE ENERGY LABORATORY/ Lecture, Laboratory

Designed to complement and augment ETS 131. The subject matter is approached by first developing the concepts of temperature, heat, and energy and then applying these ideas to alternative energy devices. Laboratory experiments include measurement of the performance of solar collectors, photovoltaic cells, and wind machines. Corequisite: Physics 111 or 112, or prerequisite: ETS 131. Limited. Two lectures and one laboratory per week.

Mr. Goble

Offered every year

161 THEORETICAL PHYSICS I

Physics 161 and 162 constitute an introduction to the concepts of classical theoretical physics. Topics considered in Physics 161 include particle and rigid body mechanics and the development of electro and magnetostatics. Useful mathematical methods are introduced and applied. Prerequisites: Mathematics 131 and Physics 111 or 112.

Mr. Davies, Mr. Landee

Offered every year

162 THEORETICAL PHYSICS II

A continuation of Physics 161. Topics covered include the development of electrodynamics through Maxwell's equations and relativity. Useful mathematical methods are developed. Prerequisite: Physics 161.

Mr. Davies, Mr. Kohin

Offered every year

174 ATOMIC AND NUCLEAR PHYSICS

This intermediate-level course provides an introduction to quantum mechanics. Basic principles are introduced and the theory is applied to the

study of atoms, nuclei, molecules and solids. Prerequisites: Physics 113 and Mathematics 131.

Mr. Landee

Offered every year

176 CONDENSED MATTER LABORATORY

Offers an introduction to the study of solids while providing laboratory experience in the methods used to analyze the structural, thermal, transport, electronic, and magnetic properties of condensed matter systems. Experimental techniques include X-ray diffraction, resistivity and specific heat, electrical and magnetic susceptibility, ultrasound propagation and attenuation, nuclear magnetic and electron spin resonance, Mössbauer effect, and, on an optional basis, electron microscopy. The experiments provide a broad introduction to research level material science instrumentation. Two discussion classes, one recitation, and about five hours of self-scheduled laboratory per week. Prerequisites: Physics 113, 114, and 123.

Staff

Offered every year beginning 1985-86

201 CLASSICAL DYNAMICS

Designed to prepare the physics major for graduate work in physics. Topics covered include Hamilton's principle, classical scattering theory, rigid body motion, canonical transformations, Hamilton-Jacobi theory, and mathematical methods of physics. Prerequisite: Physics 161 and 162.

Staff

Offered every year

202 ELECTRODYNAMICS

Designed to prepare the physics major for graduate study in physics. Topics covered include boundary-value problems in electrostatics and magnetostatics, the electromagnetic field equations and special relativity, electromagnetic waves, radiation theory, multipole fields, and mathematical methods of physics. Prerequisite: Physics 162.

Staff

Offered every year

205 QUANTUM MECHANICS - PART I

Physics 205 and 206 constitute a comprehensive introduction to the concepts of quantum mechanics and their application in physics and chemistry. The goal of this year course is to prepare students for graduate work. The lectures are the same as in Physics 305, but assignments and evaluation are separate. Prerequisites: Physics 174 and Mathematics 131.

Mr. Gould

Offered every year

206 QUANTUM MECHANICS - PART II

Physics 206 is a continuation of Physics 205. Prerequisite: Physics 205.

Mr. Gould

Offered every year

209 STATISTICAL MECHANICS

Designed to prepare the physics major for graduate work in physics. Lectures are the same as in Physics 309, but evaluation is separate. Prerequisites: Physics 123 and 174.

Mr. Gould

Offered every other year

211 INTRODUCTION TO METEOROLOGY

Refer to course description under Geography 211.

Ms. Nicholson

Offered every other year

214 PHYSICAL INSTRUMENTATION LABORATORY

An introduction to modern physical research instrumentation. The course deals with the advanced interpretation of physical measurements in modern physics and is the same as Physics 114, except that interpretation of experiments is at the advanced undergraduate or beginning graduate level. Undergraduates who have completed 114 may register for 214.

Mr. Hohenemser

Offered every year

215 ADVANCED COMPUTER SIMULATION LABORATORY

Is similar in nature to Physics 115 but treats topics at a more advanced level. Suitable for graduate students in the sciences or undergraduates who have completed Physics 115. Prerequisite: Physics 115 or permission of the instructor.

Mr. Gould

Offered every year

219 ADVANCED ELECTRONICS LABORATORY

Similar to Physics 119 but treats topics at a more advanced level. The course is suitable for graduate students in the sciences or undergraduates who have completed Physics 119. Prerequisite: Physics 119 or permission of the instructor.

Mr. Landee

Offered every year

230 DIRECTED READINGS IN PHYSICS

These directed readings in physics provide for special needs not covered in regular courses. Offered by arrangement and for variable credit.

Staff

Offered every semester

231 SPECIAL PROJECTS IN PHYSICS I

An independent research project in experimental, theoretical or applied physics, done under guidance of a faculty adviser. It is normally taken in the senior year to fulfill the senior project requirement. Students may enroll more than once in Physics 231 if they begin a new project under a different faculty adviser. Students in continuing projects should enroll in Physics 232 and 233. Offered for variable credit. By permission of the faculty adviser.

Staff

Offered every semester

232 SPECIAL PROJECTS IN PHYSICS II

The second-semester continuation of Physics 231 for students engaged in an ongoing research project under the same faculty adviser. Offered for variable credit. Prerequisites: Physics 231 and permission of the adviser.

Staff

Offered every semester

233 SPECIAL PROJECTS IN PHYSICS III

The third-semester continuation of Physics 231 and 232 for students engaged in an ongoing research project. Offered for variable credit. Prerequisites: Physics 232 and permission of the adviser.

Staff

Offered every semester

240 TOPICS IN BIOLOGICAL PHYSICS/ Lecture

Specifically designed for the senior physics major in the biological physics program. The principles of biology, chemistry, and physics are applied to a variety of biological phenomena.

Mr. Andersen

Not offered on a regular basis

250 SENIOR SEMINAR

This capstone covers a selection of topics of current interest in physics. Offered for variable credit.

Staff

Not offered on a regular basis

301 CLASSICAL DYNAMICS

A graduate-level course in classical mechanics. The topics covered are similar to Physics 201 but are treated in greater depth.

Mr. Davies

302 CLASSICAL ELECTRODYNAMICS

A graduate-level course in classical electromagnetic theory. The topics covered are similar to Physics 202 but are treated in greater depth.

Mr. Bluemel

303 RESEARCH APPRENTICESHIP

An apprentice has direct participation in the experimental and theoretical research groups of the department. The student spends seven to fourteen weeks working in a variety of research groups. Ph.D. students should enroll in the course for two semesters; M.A. students for one semester.

Staff

305 QUANTUM MECHANICS - PART I

Physics 305 and 306 constitute a comprehensive introduction to the concepts of quantum mechanics and their application in physics and chemistry. Topics treated in Physics 305 include the foundations of quantum mechanics, symmetries and angular momentum, particle in a central potential, electron spin, and perturbation theory.

Mr. Gould

306 QUANTUM MECHANICS - PART II

A continuation of Physics 305. Topics discussed include scattering theory, interaction of radiation with matter, second quantization, applications to simple atoms and molecules, and an introduction to many-body theory.

Mr. Gould

309 STATISTICAL MECHANICS

A comprehensive course in statistical mechanics with applications to chemical and physical systems. Topics discussed include ensemble theory, the statistical basis of thermodynamics, quantum statistics, the cluster expansion for a classical gas, ideal Bose and Fermi systems, applications of the renormalization group to the Ising model and linear polymers, and fluctuation theory.

Mr. Gould

310 SOLID STATE PHYSICS

Surveys the most important experimental properties of solids and introduces students to the quantum theory of solids. Topics include crystal and reciprocal lattice structures, the free electron theory of metals, electronic band structure and the Fermi surface, lattice vibrations, and the elementary excitations of solids. Prerequisite: Physics 305, or permission of the instructor.

Mr. Collins, Mr. Landee

315 ADVANCED QUANTUM MECHANICS

Covers relativistic quantum mechanics, quantum electrodynamics, many-body theory, and other advanced topics. Prerequisite: Physics 306 or equivalent.

Staff

317 SOLID STATE SPECTROSCOPY

A theoretical and experimental review of the physics of solids observed using spectroscopic methods.

Staff

319 ADVANCED STATISTICAL MECHANICS

Treats the statistical mechanics of interacting systems including the theory of critical phenomena and kinetic theory. Other advanced topics of current research interest will also be discussed. Prerequisite: Physics 309.

Mr. Gould

320 ADVANCED SEMINAR IN PHYSICS

Provides for special coverage of topics in physics of current research interest. Offered for variable credit.

Staff

325 RESEARCH SEMINAR

A student participation seminar in current research problems. Offered for variable credit.

Staff

340 COLLOQUIUM

Weekly invited lecturers speak on research topics of current interest. Required for all graduate students. Not offered for credit.

Staff

350 RESEARCH

Thesis and dissertation preparation. Offered for variable credit.

Staff

Psychology

DEPARTMENT FACULTY

Seymour Wapner, Ph.D., *chair*: developmental analysis of person-in-environment relationships, perception, perceptual and cognitive development

Robert W. Baker, Ph.D.: personality theory, abnormal behavior, clinical methods

Roger Bibace, Ph.D.: cognitive developmental approaches to lifecycle, behavioral sciences and family medicine, doctor/patient relationships, psychoanalysis

Leonard Cirillo, Ph.D.: developmental approach to symbolic action

William Damon, Ph.D.: development of social conceptions, developmental psychopathology, moral development, peer interaction and developmental growth

- Tamara Dembo, Ph.D.: social-emotional relationships with special consideration of the problems of deprived and disabled people, social psychology of rehabilitation
- Joseph H. deRivera, Ph.D.: phenomenological psychology, affective experience, particularly the explication of structure and function of different emotions, the relationships between emotion and action in field-theory, the role of phenomenology in humanistic psychology and social change
- Rachel Joffe Falmagne, Ph.D.: logical cognition, logico-semantic development
- Bernard Kaplan, Ph.D.: developmental perspective to all psychological activities, use of dramatistic categories, philosophical-historical critique of contemporary psychological approaches to human action
- James D. Laird, Ph.D.: self-attribution, attributions to others, structures of person awareness, world hypotheses as personality variables
- Judith A. List, Ph.D.: cognitive and intellectual development throughout the life span, information processing analysis of intelligence test performance, memory development, research methodology and statistics, educational evaluation
- Victoria A. McGillin, Ph.D.: family organization and family therapy, normative-developmental crises and risk for psychopathology, sex roles and interpersonal behavior, developmental differences in social reasoning and social role behavior
- Donald G. Stein, Ph.D.: recovery of function after brain damage, biological bases of learning and memory, psychobiology of aging
- David A. Stevens, Ph.D.: taste and smell, psychophysics, discrimination learning
- Nicholas S. Thompson, Ph.D.: social behavior and communication of crows, bluejays, and mimic thrushes; evolutionary theory and behavior
- Ina C. Uzgis, Ph.D.: cognitive development, infant development, mother-infant interaction, communication development, changes in understanding of object concept and spatial relations
- Morton Wiener, Ph.D.: verbal and non-verbal communication and non-verbal behaviors, the learning of behaviors labelled schizophrenic and of behaviors labelled depressive
- Marianne Wiser, Ph.D.: visual perception, cognitive development, especially concept acquisition

ADJUNCT FACULTY

- Jessica Jenner, Ph.D.
David Zern, Ph.D.

AFFILIATED FACULTY

- Marilyn Albert, Ph.D.
Martin Albert, Ph.D.
Michael Alexander, Ph.D.
David Bear, M.D.
Michael Biber, Ph.D.
Hiram Brownell, Ph.D.
Robert A. Ciotton, Ph.D.
Deborah Fein, Ph.D.
Harold Goodglass, Ph.D.
Jane M. Healey, Ph.D.
Nancy Helm-Estabrook, Ph.D.
Jane Holmes, Ph.D.

Davis Howes, Ph.D.
 Edith F. Kaplan, Ph.D.
 Deborah S. Kellett, Ph.D.
 Francesca LaVecchio, Ph.D.
 Jacqueline Liederman, Ph.D.
 Lise Menn, Ph.D.
 Marlene Oscar-Berman, Ph.D.
 Margaret Naeser, Ph.D.
 Loraine Obler, Ph.D.
 Merle Orren, Ph.D.
 Lawrence Peterson, Ph.D.
 Lawrence Seidman, M.D.

RESEARCH AND CLINICAL ASSOCIATES

Maria Fafouti-Milenkovic, Ph.D.
 Gail Hornstein, Ph.D.
 Ogretta V. McNeil, Ph.D.
 Angel Pacheco, Ph.D.
 Mark Quirk, Ed.D.
 Mary Walsh, Ph.D.
 Mary Watkins, Ph.D.
 Craig Wiener, Ph.D.

UNDERGRADUATE PROGRAM

The department has emphasized, in undergraduate courses and research, the same respect for scholarship as it has at the graduate level. The aims of the undergraduate program are: to promote respect for intellectual activity, to encourage an attitude of intelligent inquiry, and to highlight the implications of psychological knowledge for an understanding of everyday phenomena. The department offers educational experiences that will enhance the students' liberal arts background and prepare them for graduate work in psychology or related disciplines.

Course Numbers: Ranges of course numbers have specific meanings according to the following key:

<i>Range</i>	<i>Meaning</i>
100-109	Courses all majors must take (general; quantitative methods)
110-149	Survey courses, psychology as a life science
150-189	Survey courses, psychology as a social science
190-199	Special freshman and sophomore courses
200-214	Laboratory courses
215-229	Research courses
230-234	More advanced courses, psychology as a life science
235-239	More advanced courses, psychology as a social science
240-259	Primarily junior and senior specialized seminars (may not be taken for graduate credit without special permission)
260-289	Primarily junior, senior, and graduate specialized seminars (may be taken for graduate credit without special permission)
290-299	Special courses (honors, directed readings, research)

Unless otherwise stated, Psychology 101 is a prerequisite to all other psychology courses.

Major Requirements. The major in psychology consists of psychology and related course requirements. The psychology requirements are designed to ensure exposure to one of the most basic distinctions in contemporary psychology, that of psychology approached as a life or a social science, to ensure some familiarity with experimental and observational methods

(laboratory and practicum requirement), to provide background in essential quantitative skills (statistics requirement—Psychology 105), and to guarantee several contacts with faculty in advanced, small-enrollment seminars.

The related requirement of two minors reflects the conviction of the department that all academic areas are actually or potentially related to psychology, but also that scholarship involves, at some point, studying subject matter in considerable depth.

1. Psychology Courses

Total of at least eight full-course equivalents, including:

- a. 101, General Psychology
- b. 105, Quantitative Methods
- c. One full-course equivalent from range 110-149 or 230-234
(survey courses: psychology as a life science)
- d. One full-course equivalent from range 150-189 or 235-239
(survey courses: psychology as a social science)
Two full-course equivalents from range 200-229
(laboratory and research courses)
Two full-course equivalents from range 240-289
(upper-level seminars)

2. Related Courses

Related courses are defined in terms of minors. A minor consists of at least four full-course equivalents in a single area or department. Two minors must be chosen from the following areas or departments:

Biology
Chemistry
Comparative Literature
Engineering, Applied Math, or Computer Science
Economics
Education
English
Environment, Technology and Society
Foreign Languages and Literatures (Linguistics included)
Geography
Government and International Relations
History
Management
Mathematics
Philosophy
Physics
Sociology
Visual and Performing Arts
Women's Studies

There are two restrictions on permissible course sequences within an area or department:

- a. In the case where a department offers more than one introductory course, only the course or courses designed to prepare students for further work in the area may be taken for related credit. In most departments, this excludes introductory courses designed for nonmajors. Detailed information about this restriction may be obtained from the Department of Psychology.
- b. The courses must form a coherent sequence or program within the context of the department in which a minor is taken. In most cases, this will be self-evident. However, in doubtful cases, the student must consult his or her psychology adviser and the department concerned.

The Honors Program. Honors work in psychology is available to seniors who have demonstrated high scholastic achievement and the ability to work independently in scholarly situations. Students may seek admission to the honors program by requesting the faculty member under whose direction students intend to do research work to submit their names to the full faculty for consideration. Students in the honors program carry out an independent empirical research project under the sponsorship of one or more faculty members. This research provides a basis for a thesis, which, upon completion, is presented and defended by the students before an Examining Committee of faculty members. On the basis of the report of the Examining Committee and the students' advisers for the project, the department may recommend to the College Board that the students be awarded departmental honors at one of the following levels: highest honors, high honors, or honors in psychology.

DOCTORAL PROGRAM

General Requirements. The department admits to graduate work only those students who plan to enroll in the Ph.D. program on a full-time basis. The overall aim of the graduate program is to provide students with a general integrated background covering the various areas of psychology. Within these emphases there are several specialized programs available.

The lack of rigid boundaries between specialty areas and the lack of carefully specified curriculum sequences require, in students, a continuous process of self-definition regarding the form of their graduate training.

Several different traditions and points of view toward the study of psychology are represented in our department, the most distinctive of which are the organismic-developmental approach (e.g., Heinz Werner) and the Piagetian approach. Rather than any theoretical allegiance, however, the most important feature of the department's intellectual character is the emphasis on theory and metatheory and their connection to empirical research. In all the department's programs, including clinical, there is a primary concern with theory, conceptual analysis, and research. The department is also somewhat unusual in American psychology in the diversity of methods of investigation used by faculty and graduate students in their work, as well as the continuing attempts to integrate these methods and their products into larger theoretical understanding. These methods include, for example, a number of kinds of conventional experimental approaches, as well as phenomenological methods, hermeneutical approaches, and naturalistic observation. Participation in research is strongly encouraged all through the graduate experience, and the nature of the research is determined primarily by a common interest of each student with that of a faculty member. The student is expected to contribute significantly to the conceptualization, design, execution, analysis, and writing-up of the work.

Advisory Committee. A committee consisting of two full-time faculty members will be assigned to help each student plan his/her curriculum to best meet needs and goals. This committee will consist of one faculty member whose work is closest to the student's research interests, and one other assigned by the department. The committee may change or waive any of the requirements of specific training programs, but ordinarily its function is to assist the student to select a curriculum from within the normal requirements.

Course Work. Students ordinarily are expected to take four courses in each semester for their first two years, including in their first year *Problem, Theory, and Method in Psychology* (301) and *Statistical Methods* (302). In

subsequent years, students continue to enroll in a full program which ordinarily includes two or three content courses and research and reading courses. A total of at least eighteen one-semester courses is required for admission to candidacy for the Ph.D.

The department retains a breadth requirement, which is administered and defined by the student's Advisory Committee. Each graduate student will submit by January 1 of the second year of graduate study a plan of study. The student will explain and defend this plan to the committee. If the committee does not approve the plan, the student may appeal this decision to the department as a whole, or may ask that different Advisory Committee be appointed. This plan will be reviewed each year in accordance with the course offerings.

To provide a basis for evaluation of students' progress early in their careers, all students are required to write two papers (or the equivalent) during each of their first four semesters, except that they need not write such papers during the semester in which they complete their M.A. thesis. Papers may be required by instructors in all or none of a student's courses. In the latter case, the student is required to submit papers in a minimum of two courses. Early in the semester, before writing the paper, the student should discuss the proposed content with the instructor. In some cases, the instructor may substitute some other "evaluatable performance" (e.g., an examination) for a paper. Note that it is the student's responsibility to ensure that the instructors in at least two of his/her courses understand that the student intends to submit these papers to them. It is the instructor's responsibility to define what constitutes an adequate fulfillment of this requirement. The student is also responsible for informing the department office, before the end of the semester, what papers will be submitted and which instructor will evaluate those papers. If students have any questions they should consult the instructor of their advisory committee.

Qualifying examination in quantitative methods. All students are required to demonstrate competence in quantitative methods by satisfactory performance on a qualifying examination in that area. The examination is normally taken at the end of the student's first year, at the completion of the course in quantitative methods.

M.A. degree. The M.A. degree, a required step in the Ph.D. program, is awarded after satisfactory completion of at least eight one-semester courses or their equivalent, the departmental paper requirement, an M.A. thesis based on the collection and analysis of data, and an oral examination on the thesis. The thesis is expected to be relatively brief, and to be in the form of an article suitable for submission to a journal appropriate for the kind of work. All of these requirements for the M.A. degree must be completed by the end of the second year of graduate study. Students who have not completed their M.A. degree by the end of the second year will not be permitted to enroll as resident students for the third year. A student who does not complete the M.A. degree by the end of the third year ordinarily is not permitted to continue in the Ph.D. program, but will be given ample opportunity to complete a "terminal" master's degree.

Major paper and oral examination. The major paper is normally to be done within one year after completing the M.A. This paper is expected to demonstrate mastery of research and theory in the student's area of specialization. To facilitate completion, the student is encouraged to enroll in *Directed Readings* with a faculty member during one or both of the semesters in which the paper is to be completed. An oral examination of this material will also be held shortly after the paper has been submitted. If the

paper is not finished on time, the faculty will select some of its members to give additional help to the student during the summer. If a student does not complete the paper before September of the fourth year, the student will not be permitted to enroll as a resident student for that year or until the paper is completed.

Admission to Ph.D. candidacy. Satisfactory completion of at least eighteen one-semester content courses (including 301 and 302), as well as the above requirements, is necessary for admission to candidacy for the Ph.D. degree. All the requirements for Ph.D. candidacy, including the major paper, must be met within two years of completing the M.A. A student who does not do so may be dropped from the Ph.D. program.

Ph.D. dissertation. The student demonstrates the ability to conduct research by the presentation of an acceptable dissertation. The topic of the dissertation usually is selected by the student working with one or more members of the faculty. Once the student has worked out a general research plan, a Dissertation Committee is formed to assist and supervise in all phases of the research effort—final plan, data analysis, writing, etc. After the committee has reviewed the dissertation proposal carefully, the proposal is circulated to all other members of the faculty for their comments and suggestions. The Dissertation Committee will then approve the final form of the proposal before the student begins the collection of data and other writing. After completion of the data collection and writing, the student submits a draft of the dissertation to the committee, who will aid the student in making necessary revisions. When the committee decides that the dissertation is complete and ready for presentation, copies are then circulated to the departmental faculty.

Ph.D. oral examination. Following submission of the dissertation to the department, a final oral examination is held in which the student presents and defends his/her dissertation and shows competence in a general field of psychology as well as in his/her area of specialization.

These guidelines result in an upper limit of six years for completion of the Ph.D. (excluding an internship year or official leave). An additional year may also be granted by faculty approval of a petition on other grounds such as parttime study because of financial necessity. Those desiring more detail on graduate requirements and their timing should request a copy of *Information on the Graduate Program in Psychology*.

Training Program in Clinical Psychology. The basic philosophy in the training of clinical psychology students, as for all graduate students in the department, is that specialization is a process of individuation and emphasis rather than one of restriction, isolation, or compartmentalization. Our aim is to provide an integrated series of intensive educational experiences in class, in laboratory, and in practicum clinical settings (in the University and other agencies) in which specialist training in clinical psychology is attained against a background of increasing competence in general psychology, theory, and research.

In addition to the more traditional opportunities, the program offers: (1) child clinical, (2) human neuropsychology, (3) family interactions. The program has, in addition to the general requirements, the following special requirements. Each student must take at least one course from each of three areas: (1) biological bases of behavior (e.g., physiological psychology, behavior and evolution, human neuropsychology); (2) cognitive-affective bases of behavior (e.g., symbolism, cognitive development, logical reasoning, action and emotion); and (3) social bases of behavior (e.g., interpersonal relations, social cognition). Each student must take the following courses in individual behavior: *Theories of Personality* (324),

Psychopathology (312), and *Theories of Psychotherapy* (332). Each student must complete a minimum of one year of internship in clinical settings; the student may satisfy this requirement by a full-time internship in the third or fourth year or by a "distributed" internship, part-time over several years. All clinical students participate for four years in the Psychological Services Center, a department-operated training agency offering psychodiagnostic and psychotherapeutic services to members of the Clark community. For further information contact one of the program's codirectors, Dr. Leonard Cirillo or Dr. Morton Wiener.

Developmental Psychology Program. The Developmental Psychology Program is intended to prepare students for a career in research, teaching, and scholarly activity. It strives to impart competence in both theoretical sophistication and empirical, experimental, and comparative inquiry with regard to developmental issues. The focus of the program is on ways of representing and examining all life phenomena rather than focusing exclusively on a particular population (e.g., infants, children, adults) or a specific subject matter. Within this general framework, however, the program does offer in-depth training with special populations and in specific areas (cognitive processes, language, symbolization, social conception, mother-infant interactions, logical reasoning, psychopathology, collective phenomena, and others). A nursery school associated with the University and a modern laboratory serve as facilities for both empirical and clinical research with children.

Since there are no sharp separations between different programs within the department, students who work primarily in the developmental program have the opportunity to become competent in the variety of methodologies (naturalistic, experimental, historical, clinical, phenomenological, hermeneutic) that enter into developmental analysis. For further information contact the program director, Dr. Ina Uzgiris.

Social-Personality Psychology Program. Perhaps the most distinctive feature of the social-personality program is its emphasis on the description and analysis of social experience. While we are also interested in how persons behave, we have a concern for experience in its own right. The faculty members most directly involved in the program have developed different research strategies that tap into the experiences of everyday life—e.g., the approach of topological and vector psychology to understand the social-emotional aspects of interpersonal relations and values as experienced by the participants; the phenomenological method to investigate emotions and the role of affective experiences in the choices that persons confront as they lead their lives; and the experimental approach to deal with the question of how persons come to know and experience themselves and to investigate the structure and function of this self-knowledge. Other members of the department provide an extremely important balance and supplement to these strategies in light of the lack of boundaries between programs and the fact that a good deal of research in other areas often involves social psychological topics. While there are no formal requirements in the social-personality program, each student is expected to become acquainted with the main approaches to experience mentioned above and is encouraged to participate in seminars with as many different faculty members as possible. For further information contact the program director, Dr. Joseph deRivera.

Experimental Psychology Program. Training is offered in the general areas of perception, cognitive psychology, and animal and human learning, according to a flexible sequence of courses and seminars covering the theoretical foundations, content, and methodology of these areas as well as

specialized topics. The typical orientation in teaching and research is an integrative one, preserving and exploring the connections between these traditionally defined areas and other areas of psychology (developmental, ethology, phenomenology, etc.). The emphasis of the program is on the acquisition of both theoretical and empirical skills. Towards this end, specialized seminars are offered in or around the areas of special interest of various faculty members: participation in ongoing research projects is encouraged, as is research generated by students' interests.

Some of the current research interests of the faculty associated with experimental training include: thinking, symbolization, and language; reasoning and language; learning and memory; cognitive processes; development of logical abilities; the chemical senses (taste and smell); animal discrimination learning and motivation; infant learning and perception; environmental perception and cognition and planning behavior; communication behaviors—verbal and nonverbal social cognition and visual perception. Facilities for research in experimental psychology include a departmental PDP-12/30 laboratory computer with an FPP-12, a large amount of closed-circuit video equipment, a Wang 2200 calculator, as well as the specialized apparatus used by investigators in the various areas of faculty interest.

Because of the relatively small student population and the active research involvements of the faculty, students have the opportunity to work closely with one or more faculty members in the experimental group or in other areas in the department. Though specialization is advisable, cross-fertilization from other areas is highly encouraged. In teaching and research in these areas, the faculty involved aim at preserving the continuity with both the mainstream of ongoing psychological research and the values and perspectives traditional to Clark, which emphasize conceptual sophistication and theoretical relevance. For further information write to Dr. Rachel Joffe Falmagne.

Psychobiology Training Program. The program in psychobiology has two major foci: physiological psychology and animal behavior. Regardless of area, students are encouraged to begin research as soon as possible after acquiring an understanding of the theoretical basis of an area and the implications of the work. Although the training is often intensive, emphasis is on a close working relationship among faculty, graduate students, and undergraduates. There are many opportunities for collaboration on major research projects including studies on: behavior recovery from brain damage, psychobiology of aging, effects of drugs and hormones on central nervous system development and neuroplasticity, naturalistic observation of various species of birds, and communication and motivation in rats. The laboratory facilities are excellent and include a major new installation for neuroanatomical investigation at the University of Massachusetts Medical Center as well as various local facilities for field studies of free ranging species. Through the Worcester Consortium, and with permission, students may enroll in courses offered at cooperating institutions including University of Massachusetts Medical Center. For further information on training in physiological psychology write to Dr. Donald Stein; for more information on animal behavior, write to Dr. David Stevens or Dr. Nicholas Thompson.

Rehabilitation Research Training. In conjunction with all other areas of specialization, rehabilitation research training is available. This training is designed to prepare students for investigations of psychological problems as they occur in everyday life. Emphasis on the development of novel techniques and concepts is the main feature of the training. An integral

part of the training is an apprenticeship-practicum during which the various phases of research in real-life settings are examined under the guidance of a staff member. This training is especially pertinent to those who are interested in social-emotional and value problems of handicapped and nonhandicapped people. For further information, write to Dr. Tamara Dembo or Dr. Joseph deRivera.

Interdisciplinary work. The department recognizes the interest of some students to undertake study and research that cuts across existing disciplines or areas. Interdisciplinary activity by students is feasible at Clark inasmuch as some members of the psychology faculty are now, or recently have been, engaged in activities with faculty of other departments.

Applicants for graduate study in psychology who are interested in securing more detailed information concerning the Department and its programs are urged to write to the department for a brochure, *Information on the Graduate Program in Psychology*.

POSTDOCTORAL TRAINING

The Psychology Department and the Heinz Werner Institute provide postdoctoral training in developmental psychology. In addition to individually oriented research and training opportunities, the developmental seminars are available for postdoctoral students.

THE HEINZ WERNER INSTITUTE OF DEVELOPMENTAL PSYCHOLOGY

Associated with the department is the Heinz Werner Institute of Developmental Psychology, which has three aims: first, to integrate various research programs dealing with developmental problems; second, to bring to Clark University scholars, teachers, and research workers from disciplines for which developmental problems are pertinent such as anthropology, biology, and certain areas of medicine; third, to train research workers on postdoctoral levels in the comparative-developmental approach to behavior.

COURSES

101 GENERAL PSYCHOLOGY/ Lecture, Discussion

Introduction to the principles of human behavior. No prerequisite. Unless otherwise noted, this course is a prerequisite to all other psychology offerings.

Mr. Wapner

Offered every semester

105 QUANTITATIVE METHODS/ Lecture

Introduction to the theory and methods of statistical inference and the logic of experimental design.

Staff

Offered every semester

130 PSYCHOLOGY OF LEARNING/ Lecture

Methods and findings in the study of learning are discussed, with emphasis on their relation to theories of learning. Selected controversial issues are examined.

Mr. Stevens

Offered every year

135 THE PARADOX OF ANIMAL SOCIALITY/ Lecture

Evaluates a new evolutionary perspective called sociobiology by examining Darwinian theory as it applies to animal social organizations. The

course redefines such concepts as natural selection, adaptation, communication, personality, emotions, grouping, and territoriality as they apply to animal behavior. This course is run with much class discussion and emphasis on questioning theories, constructing new models, and arriving at new, clearer definitions. Prerequisite: Introductory biology or psychology normally required, but open to freshmen with special qualifications; please see instructor.

Mr. Thompson

Offered every year

140 SENSATION AND PERCEPTION/ Lecture

The five senses are studied with special emphasis on visual perception. Focus is on the processes by which information is picked up from the environment and then coded, transformed, and integrated by the sensory systems. Topics include: the neurophysiology of each sensory system, feature detectors, pattern perception, perceptual constancies, visual illusions, space perception, and perceptual development.

Ms. Wiser

Offered every other year

150 INTRODUCTION TO CHILD PSYCHOLOGY/ Lecture

The development of intellectual and social functioning in the child will be discussed. Theoretical approaches to conceptualizing change in the developing child will be emphasized: psychoanalytic, Piagetian, and behavioristic approaches will be contrasted.

Staff

Offered every year

162 PSYCHOANALYTIC INTERPRETATION OF BEHAVIOR/ Lecture, Discussion

Offers students a basis for the understanding and application of psychoanalytic (Freudian) concepts. Students are challenged to interpret simple and complex conflicts in behavior. This also requires students to remember definitions and give examples of concepts. The course focuses on the way psychoanalysts reason. The final examination requires students to analyze a major literary work from a psychoanalytic perspective. Psychology 101 is *not* a prerequisite.

Mr. Bibace

Offered every semester

169 THE PSYCHOLOGY OF LOVE AND HATE IN LIFE AND LITERATURE/ Lecture

An examination of how the emotions of love and hate are manifested in infancy, childhood, adult life, and in social-collective phenomena. The course deals with related emotions such as envy, greed, jealousy, and despair. Prerequisite: permission of instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

170 SOCIAL PSYCHOLOGY/ Lecture

The course focuses primarily on modern research in experimental social psychology. Topics include, for example, emotions, attitudes, persuasion, self-perception and the self, aggression, prejudice, friendship, romantic love, social control, altruism, leadership and group process.

Mr. Laird

Offered every other year

172 PSYCHOLOGY OF PERSONALITY/ Lecture

Consideration of various theoretical approaches, including psychoanalytic, behavioristic, and phenomenological-humanistic theories. Other content

may include case illustrations and research in such areas as stress, anxiety, unconscious processes, emotion, and motivation.

Mr. Cirillo, Mr. Laird

Offered every semester

193 INTERPRETATION OF DREAMS/ Lecture

Deals with the exposition, application, and critical evaluation of various systems of dream interpretation. Included are the systems of Freud, Jung, Stekel, Boss (phenomenological), May (existentialist), Erikson, Gestalt therapists (e.g., Perls), and others. Problems of "validity of interpretation" are discussed and the relation of dream interpretation to the interpretation of other "products of the imagination" is examined. This course is accessible to students, freshmen to seniors. There is a limited enrollment. Prerequisite: permission of instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

194 THE PSYCHOLOGY OF PLAY/ Lecture

The psychological significance of play in the life of the individual is explored. Special emphasis includes symbolic play, the development of play from childhood to adulthood, and the relation between individual and social play. Comparative analyses consider the function of play in nonhuman as well as the human species. Psychology 101 is *not* a prerequisite for this course. The class is limited to 20 freshmen and sophomores.

Mr. Damon

Offered every other year

195 PURSUIT OF AN INQUIRY/ Seminar

Designed primarily for incoming students, this course provides an opportunity for them to pursue a piece of independent scholarship in the field of their choice. Each must write a substantial term paper by the end of the semester. Class meetings are used to clarify the exposition of ideas and to train the participants in how to exploit the resources of the community for independent scholarship. Papers may be written on any topic the writer pleases. Psychology 101 is *not* a prerequisite.

Mr. Thompson

Offered every year

196 THE PSYCHOLOGY OF AMERICAN SPORT/ Lecture

Focuses on two kinds of psychological issues: those related to the participant and those related to the spectator. Participant topics include the problems of teaching and learning physical skills, with special attention to the relation between our actions and our ideas about our actions; the effects of athletic participation on other physical and mental functioning; and the role of psychological factors in athletic and other performance, including both transient factors such as confidence and "momentum" and relatively enduring factors such as the personality of the performer. Among the topics covered with respect to the spectator are the social and psychological functions of spectator sports for individuals and society and the effects of spectator sports on the audience, with special attention to the effects of athletic violence on audiences. No prerequisites; unlimited.

Mr. Laird

Offered every other year

200 LABORATORY IN ETHOLOGY/ Laboratory, Discussion

The members of the class participate in research projects on the behavioral biology of a variety of species, mostly birds. Members work in small teams each of which is devoted to the study of a single species. Bird species available for study include bluejays, red wing black birds, song sparrows,

towees, robins, barn swallows, orioles, bobolinks, phoebes, crows, cardinals, and others. Nonbird species include wasps, frogs, dairy cattle, and others. The laboratory is conducted at the instructor's farm in New Braintree. Transportation to the farm may be provided at a nominal extra cost. Students must provide their own binoculars and wet weather gear. Enrollment is limited. Admission is by negotiation.

Mr. Thompson

Offered periodically

201 LABORATORY IN SOCIAL PSYCHOLOGY/ Laboratory, Discussion

General principles of experimental design are learned through the design and performance of original experiments in experimental social psychology. Both group and individual experiments are conducted in any of the usual topic areas of social psychology. The lab is limited to 20 students. Prerequisites: Psychology 170, 105, and permission of the instructor.

Mr. Laird

Offered every year

202 LABORATORY IN CHILD RESEARCH/ Laboratory, Discussion

An introduction to methods used in the study of child thought and behavior. Students conduct research projects involving observational, experimental, and interviewing techniques. Discussions will consider means of data analysis as well as data collection. Prerequisite: Psychology 105. The lab is limited to 16 students.

Mr. Damon

Offered every year

203 LABORATORY IN HUMAN COGNITION/ Laboratory, Discussion

Experimental studies are considered in the area of reasoning and language comprehension, learning, and memory. This course is aimed at familiarizing the students with the methods used in cognitive psychology, the range of problems studied, and the theoretical concepts used to interpret experiments. Skills in experimental design, statistical analysis, reading and summarizing scientific journal articles, and scientific writing are acquired in the context of conducting two or three closely supervised experimental projects and one more independent project. Prerequisite: Psychology 105.

Ms. Joffe Falmagne

Offered every year

204 LABORATORY IN EMOTION AND MOTIVATION/ Laboratory, Discussion

Includes the design of studies to test ideas about emotions and how they influence our actions, the gathering of data, and ways to report the data to the psychological community.

Mr. deRivera

Offered every year

205 LABORATORY IN CHEMICAL SENSES/ Laboratory, Discussion

Concepts of experimental design and method are discussed. Experiments are conducted on the scaling of taste, smell, and flavor. Examples are comparison of the sweetness and pleasantness of different sugars, and determination of the role of odor in flavor perception. Prerequisite: Psychology 105.

Mr. Stevens

Offered every year

206 LABORATORY IN PERSONALITY/ Laboratory, Discussion

The issues and problems in psychological research in general and in the personality area in particular are examined, the problems being exemplified in studies developed and performed by the class group and by individuals. Experiments may be in any of the conventional areas of per-

sonality research, such as perceptual defense, motives and performance, self-perception, experimenter influence, and emotions. Prerequisites: Psychology 170 or 172, 105, permission of the instructor.

Mr. Laird

Offered every year

207 LABORATORY IN PERCEPTION/ Laboratory, Discussion

Stresses mastery of experimental skills and scientific writing in the context of the investigation of sensory and perceptual phenomena in a variety of sense modalities. Prerequisites: Psychology, 105, 140, permission of instructor.

Ms. Wiser

Offered every year

208 LABORATORY IN CHILD PSYCHOLOGY/ Laboratory, Discussion

An introduction to research methods employed in the study of children through participation in studies carried out by the class. Analysis and write-up of results is done individually. Relevant theoretical and methodological issues are discussed with the aim of placing the experimental study of child behavior within the study of development. Prerequisites: Psychology 105, 150.

Ms. Uzgis

Offered every year

210 LABORATORY IN PHENOMENOLOGY/ Laboratory, Discussion

Designed to acquaint students with the method of "conceptual encounter"—a way of interviewing that is useful in exploring the structure of emotional experience. Prerequisite: Psychology 243.

Mr. deRivera

Offered every year

211 FIELD OBSERVATION: COGNITIVE AND SOCIAL-INTERPERSONAL BEHAVIOR IN THE CLASSROOM SETTING/ Laboratory, Discussion

The illustration of various cognitive and social-interpersonal models of human behavior in the classroom setting is observed. Special consideration is given to the work of Freud, Piaget, Skinner, Wertheimer, Lewis, and F. Kluckhohn. Students carry out field observations and formulate and execute their own individual projects. Prerequisites: Psychology 105, permission of instructor.

Mr. Zern

Offered every year

213 LABORATORY IN INTERPERSONAL RELATIONS/ Laboratory, Discussion

Interpersonal relations of the donor-recipient kind are investigated. Students learn how to analyze qualitatively these duality relations. Interviews and analysis of one's own experiences are the primary methods used in the laboratory. The type of analysis used is useful in everyday life, during practical work such as rehabilitation, and for the development of general conceptualizations necessary for the advance of qualitative psychological knowledge. Prerequisite: permission of the instructor. Corequisite: Psychology 286. Open to juniors, seniors, and graduate students only. The lab is limited to fifteen students.

Ms. Dembo

Offered in spring

214 LABORATORY IN REHABILITATION/ Laboratory, Discussion

The distinction between individual and social rehabilitation is given major attention. Within social rehabilitation special emphasis is placed on the area of interpersonal relations. Students learn how to determine problems,

investigate them, qualitatively analyze them, and alleviate them. Prerequisite: permission of the instructor. Corequisite: Psychology 274. Open to juniors, seniors, and graduate students only. The lab is limited to fifteen students.

Ms. Dembo

Offered in fall

215 RESEARCH IN EMOTION AND MOTIVATION/ Laboratory, Discussion

Students, working in close collaboration with the instructor, design, conduct, and present a piece of research that investigates an emotional or motivational phenomenon. Prerequisites: Psychology 184 or Psychology 285, and permission of instructor.

Mr. deRivera

Offered every year

216 RESEARCH IN STUDENT ADJUSTMENT TO COLLEGE/ Laboratory, Discussion

The rationale, method, and findings of an ongoing research project at Clark investigating personality and environmental determinants of adjustment to college, with consideration of similar research elsewhere as reported in the professional literature. Relevant issues in personality measurement are addressed, and each student develops and carries out an empirical investigation relevant to the course topic. Prerequisites: Psychology 105 and 172 and permission of instructor.

Mr. Baker

Offered every semester

217 RESEARCH ON DEVELOPMENT IN EARLY CHILDHOOD/ Laboratory, Discussion

With roots in Piaget's theorizing, a constructivist-interactionist approach to the study of development in infancy and early childhood is exemplified through the findings and problems from ongoing research projects. Students each formulate a pertinent study, carry it out, and prepare papers describing their work. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every year

218 RESEARCH IN ANIMAL BEHAVIOR: ETHOLOGY/ Laboratory, Discussion

Weekly meetings in which research literature of interest to the group is reviewed, and participants' research projects are designed and evaluated. Prerequisite: permission of instructor.

Mr. Thompson

Offered every year

219 RESEARCH IN BRAIN DAMAGE AND BEHAVIOR/ Laboratory, Discussion

Usually lasts at least one academic year and is open to anyone who has the high level of motivation and intellectual curiosity necessary to participate in an intensive program of research on the relationship between brain function and behavior. Essentially, the course takes the form of a "tutorial" in which there is a very close working relationship among students, the professor, and the graduate students working in the laboratory. There is active involvement in *all* phases of research, including searching available literature, planning and design of experiments, all surgical and histological procedures, data analyses, and final preparation of the material for presentation (by the students) at scientific meetings or for publication. It must be emphasized that, while solid grasp of experimental techniques is necessary, the development of conceptual and theoretical skills is given

first priority. Enrollment is strictly limited and is by invitation of the instructor. Prerequisites: high academic standing, biological or experimental background desirable but not essential.

Mr. Stein

Offered every semester

220 RESEARCH IN CHEMORECEPTION/ Laboratory, Discussion

Students design, conduct, and interpret research in taste, smell, and flavor. Prerequisite: permission of instructor.

Mr. Stevens

Offered every year

221 RESEARCH IN SOCIAL PSYCHOLOGY/ Laboratory, Discussion

Students participate in the design, execution, analysis, and interpretation of research on self-awareness and self-knowledge, including areas of emotions, attitudes, and abilities. Prerequisites: previous courses in social psychology, statistics, and at least one laboratory course, and permission of the instructor.

Mr. Laird

Offered every year

222 RESEARCH IN CONCEPTUAL DEVELOPMENT/ Laboratory, Discussion

Students participate in an ongoing research program in collaboration with the instructor in the area of conceptual development. Prerequisite: permission of the instructor. Enrollment limited to six.

Ms. Wiser

Offered every year

223 RESEARCH IN VERBAL AND NONVERBAL COMMUNICATION/ Laboratory, Discussion

Reviews some of the issues and methodologies used in investigations of communication, verbal and nonverbal. Each student is helped to formulate a research plan and to carry it out.

Mr. Wiener

Offered every other year

226 RESEARCH IN PERCEPTION/ Laboratory, Discussion

Students participate in an ongoing research program in collaboration with the instructor in the area of perceptual processing and the components of perceptual development. Prerequisite: permission of the instruction, Psychology 140. Enrollment limited to six.

Ms. Wiser

Offered every year

228 RESEARCH ON DEVELOPMENTAL ASPECTS OF TRANSACTIONS OF PERSONS-IN-ENVIRONMENTS/ Laboratory, Discussion

Theory, findings, and research problems deriving from an ongoing research program—an organismic-developmental systems approach to the analysis of transactions of persons-in-environments—are discussed. Empirical studies on problems relevant to the research program are formulated and conducted by individual students. A research proposal and final report describing the research project are prepared. Ideally, the research is presented at undergraduate or professional meetings, and a manuscript is prepared for submission to a journal. Prerequisites: Psychology 105, permission of instructor.

Mr. Wapner

Offered every semester

229 RESEARCH IN FAMILY/ Laboratory, Discussion

Students participate in ongoing studies of family interaction processes, family communication, and family change, which focus on research design and analysis of family functioning. Prerequisite: one laboratory course or permission of the instructor.

Ms. McGillin

Offered every year

230 BRAIN FUNCTION AND BEHAVIOR/ Lecture

A survey of current problems in physiological psychology including theories of brain function. Emphasis is placed on the underlying physiological mechanisms that mediate behavior, i.e., motivation, emotion, learning, perception, and memory. The course is constructed on a systems approach, designed to demonstrate the complex and interdependent relationship of the body and brain to behavior.

Mr. Stein

Offered every fall semester

232 HUMAN COGNITION/ Lecture

Critically surveys current theoretical viewpoints, empirical findings, and selected theoretical issues in the areas of language, concepts and categorization, memory, pattern recognition, reasoning, mental imagery, and knowledge representation. Though not a seminar, student participation is required some of the time through structured discussions of readings and class presentations. Prerequisite: Psychology 105.

Ms. Joffe Falmagne, Ms. Wiser

Offered periodically

235 PSYCHOTHERAPIES/ Seminar

A variety of methods of curing symptoms, solving problems in living, and promoting personal development are considered through class discussion and illustration and through intensive reading of primary sources. Credit depends on written papers as well as class participation. Prerequisites: Psychology 172, permission of the instructor.

Mr. Cirillo

Offered every year

236 PROBLEMS OF NUCLEAR WAR/ Seminar

The problems posed by the nuclear arms race can be solved only with the help of many different disciplines, and we shall be aided by faculty from economics, government, history, military science, physics, and sociology. An attempt is made to unify these different perspectives by developing the basic concepts of social psychology. We shall use our new knowledge to devise plans of action to end the nuclear arms race, plans which we will test and reevaluate by engaging in concrete action.

Mr. deRivera

Offered every other year

238 ISSUES IN ADOLESCENT PSYCHOLOGY/ Lecture, Discussion

Covers selected topics in the field of adolescent psychology such as sex-role development, sexuality, the development of reasoning. No prerequisites.

Ms. McGillin

Offered periodically

240 DEVELOPMENTAL APPROACHES TO BEHAVIOR/ Seminar

A critical examination of presuppositions, methods, concepts, and empirical inquiries of those concerned with the development of behavioral systems. Implications of developmental conceptualization for all of the life

sciences are discussed. Psychological theories of Freud, Piaget, and Werner are given special emphasis. Prerequisite: permission of instructor.
Mr. Kaplan Offered periodically

242 PSYCHOLOGY OF LANGUAGE/ Seminar

A social-psychological and anthropological analysis of the various functions of language. Deals with language in everyday life, poetry, dreams, social movements, etc. Also considered are various philosophical views of language and the relations between language and thought. Prerequisite: permission of instructor. There is a limited enrollment. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

243 SEMINAR IN PHENOMENOLOGICAL PSYCHOLOGY/ Seminar

Describes and analyzes personal experience. Each of the readings describes a different aspect of experience. We then compare these descriptions with our own experience of our body, our environment, our self, others, our emotions, actions, and thoughts, and with our imagination and our relationship to reality.

Mr. deRivera

Offered every year

245 DEVELOPMENT IN INFANCY/ Seminar

Current research on human infants is examined, with emphasis on relations between functioning during this period and later in ontogenesis. A view of the child as an organized adaptive system is emphasized. Topics to be considered include learning, intellectual functioning, social relationships, and the beginnings of language. Some consideration is given to deviations from normal development. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every other year

247 SOCIAL DEVELOPMENT FROM INFANCY THROUGH ADOLESCENCE/ Seminar

An examination of theories and research dealing with the process of socialization in the first two decades of life. Topics to be emphasized include: attachment, role taking, the development of social and sexual identity, and moral development.

Mr. Damon

Offered every year

248 CONCEPTS IN THEORIES OF PERSONALITY—NORMAL AND ABNORMAL/ Seminar

Considers and analyzes: (1) concepts and issues in theories of personality and (2) concepts used to account for deviant behavior.

Mr. Wiener

Offered every year

249 WOMEN IN SOCIETY/ Seminar

Includes three related parts: 1) *the context*, including a cross-cultural, anthropological examination of women's cultural status in society, an examination of economic and historical factors in that regard, a study of the environmental factors impinging on the individual (language, media, literature, cultural institutions—e.g., family), and a discussion of the role of biological factors in psychological functioning; 2) *individual functioning*, covering such topics as personality development, life issues of women, achievement, motivation, intellectual functioning, power, etc.; 3) *women's roles and functions in society*, including mothering, work, professional

careers, homemaking, politics, as well as issues relating to role choices and adult development. Critical discussions of interactions between cultural-social, psychological, and biological factors are emphasized, and extensive bibliographical references are provided for students' further use after taking the course.

Ms. Joffe Falmagne

Offered every year

250 COMMUNICATION: VERBAL AND NONVERBAL/ Seminar

Deals with: (1) an analysis of the term communication and (2) a study of the varieties of communication patterns for different populations.

Mr. Wiener

Offered every year

254 INTERPRETATION OF BEHAVIORS TRADITIONALLY SUBSUMED BY "ABNORMAL PSYCHOLOGY"/ Seminar

Behaviors such as schizophrenia, depression, hysteria, obsession, and antisocial personality are examined. The goal is to articulate multiple theoretical and relational perspectives regarding what is referred to as "abnormal," assumptions regarding how "abnormality" comes about, methods of treatment, and the assumptions which lie behind them. Students participate in the clinician's "world of action." Students observe, describe, interpret, and prescribe courses of action for sample "cases," which fall within various "abnormal" categories. Prerequisite: Psychology 172, permission of instructor.

Mr. Bibace

Offered every semester

261 HUMAN NEUROPSYCHOLOGY PROSEMINAR, PARTS I AND II/ Lecture, Discussion

Approximately ten prominent lecturers review and discuss current research. Topics include: overview of brain organization, brain electrical potentials, cerebral dominance, neuroanatomy and pathology of language, bilingualism, emotion, psychosurgery. Year-long course; divisible. Open to advanced undergraduates and graduate students.

Ms. Oscar-Berman, Ms. Kaplan

Offered every year

262 NEUROPSYCHOLOGY OF PERCEPTION AND MEMORY/ Seminar

Models of normal information processing and their application to neurologically impaired perceptual and mnemonic processes are reviewed. An attempt is made to show how different neurological disorders represent failures at distinctive stages of information processing. Clinical materials related to visual object agnosia, constructional apraxia, and various amnesic states are presented and discussed in detail. Emphasis is placed upon a critical examination of the theoretical and experimental investigations of Luria, Teuber, Talland, and Milner. Open to advanced undergraduate and graduate students.

Ms. Oscar-Berman

Offered periodically

263 PERCEPTUAL DEVELOPMENT/ Seminar

Focus is on development of visual, auditory, tactile, kinesthetic, and motor abilities during the first two years of life. Topics include anatomical and neurophysiological development of sensory systems, form perception, space perception, intersensory integration, object and event perception, speech perception. Several theoretical viewpoints are studied such as nativism and empiricism, E. Gibson, Piaget, T.G. Bauer, among others. Prerequisite: permission of the instructor. Open to graduate students.

Ms. Wiser

Offered alternate years

264 HISTORY AND EVOLUTION OF IDEAS IN BRAIN FUNCTION AND BEHAVIOR/ Seminar

Discusses the evolution of the concepts of brain function and structure beginning with ancient Greek and Middle Eastern notions of the mind-body problem and ending with current concepts of the brain. The issue of localization of function in the brain and the evolution of thinking about this problem serve as the underlying theme for organizing the topic. All students are expected to present short seminars and lead a critical and evaluative discussion of the materials they present. A critical, evaluative paper on the topic of the student's choice must be submitted by the end of the semester to obtain credit for this course. Prerequisite: permission of the instructor.

Mr. Stein

Offered periodically

265 NEUROPSYCHOLOGY OF LANGUAGE/ Seminar

Aphasia, alexia, and associated disorders of language resulting from focal brain damage are reviewed in relation to current conceptions of normal language function. Open to advanced undergraduate and graduate students.

Mr. Howes, Ms. Menn

Offered periodically

266 CEREBRAL DOMINANCE SEMINAR/ Seminar

The clinical basis for present views of cerebral dominance is reviewed in relation to developmental and genetic evidence. Experimental studies with normal and pathological populations are reviewed with respect to their bearing on theories of brain laterality. Open to advanced undergraduate and graduate students.

Mr. Goodglass, Staff

Offered periodically

267 MIND IN EVOLUTION/ Seminar

Studies in the mental life of animals from the 19th century to the present. The course explores if and how we may reasonably make inferences concerning the feelings, motives, emotions, and thoughts of various animals ranging from geese to humans.

Mr. Thompson

Offered every year

269 MOTIVATION/ Seminar

The concept of motivation is examined. Several theoretical models are discussed, including those of psychoanalytic, ethological, and learning theories. Each member of the class makes an oral presentation and submits a paper.

Mr. Stevens

Offered every year

270 ADVANCED TOPICS IN SOCIAL PSYCHOLOGY/ Seminar

An intensive treatment of selected areas in social psychological research and theory, including consistency theories in attitude formation and in interpersonal perception; attribution theory in self-perception; social/situational determinants of normal, everyday behavior and of antisocial behaviors such as violence, criminality, and riots. Ordinarily limited to senior majors in psychology or sociology. Prerequisite: permission of instructor.

Mr. Laird

Offered every other year

271 THEORIES OF FAMILY PROCESS: NORMAL AND ABNORMAL/ Seminar

Entails comparisons across the major theoretical models used to explain family interaction. Calling upon clinical and normative models, case illustrations, and empirical applications, students are expected to master a trans-theoretical systems framework. Prerequisite: permission of the instructor.

Ms. McGillin

Offered every year

273 CRITIQUE OF PSYCHOLOGICAL THEORIES AND APPROACHES TO SOCIAL SCIENCE

This course is aimed at a systematic critique of various approaches to psychology on the contemporary scene, including psychoanalysis, sociobiology, Piagetian theory, organismic-developmental theory, cognitive science, phenomenological psychology, etc. No prerequisites. Permission of the instructor.

Mr. Kaplan

Offered periodically

274 SEMINAR IN REHABILITATION

Specific rehabilitation problems in interpersonal relations are discussed in qualitative research terms. Emphasis is placed on environmental conditions determining the lives of disadvantaged groups. Prerequisite: permission of the instructor. Corequisite: Psychology 214. Open to juniors, seniors, and graduate students only. The seminar is limited to fifteen students.

Ms. Dembo

Offered in fall

275 SEMINAR IN THEORIES OF PERSONALITY

For seniors (both majors and nonmajors who have an interest in and some knowledge of psychology) and for graduate students (in disciplines other than psychology). Focus is on different views of Freud (e.g., Strachey, Bettelheim, Schafer) and on Freud as modified by some Freudians (e.g., Erikson) as well as a survey of some other approaches to the study of "personality." The concerns of the course are to elucidate the "metaphor" in the different theoretical perspectives and some of the "entailments" of each of these metaphors.

Mr. Wiener

Offered every other year

276 SYMBOLISM IN EVERYDAY LIFE; MYTH, DREAM AND SYMBOL/ Seminar

A close examination of the processes of symbol formation in everyday figurative and metaphorical language, in dreams, in myths, and in other productions of the imagination. Both cultural and individual manifestations of symbol formation are examined, and various frameworks for interpretation of symbols are critically discussed. Problems of validity of interpretation are also explored. Prerequisite: permission of the instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered every other year

277 THE CREATIVE PROCESS/ Seminar

A critical examination of a number of attempts, in the humanities and human sciences, to describe and/or explain manifestations of creativity in the arts, sciences, and other domains. Major focus is on the factors presumably constituting the creative act, or inherent in creative functioning. Subsidiary attention is paid to conditions in the cosmos, society, or the

"personality structure" putatively facilitating or inhibiting creative functioning. Among the theorists considered will be such philosophers as Aristotle, Kant, Hegel; such belletrists as Coleridge, K. Burke, A. Koestler; psychoanalysts of various persuasions and degrees of clarity, Freud, Kris, Rycroft, Jung, Neumann, Arieti, et al; psychologists from various schools, phenomenological, Gestalt, behavioristic. Limited to 20 students. Permission of the instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered periodically

278 COGNITIVE DEVELOPMENT FROM INFANCY TO ADOLESCENCE/ Seminar

Focuses on an examination of selected research studies and theoretical accounts of concept development, memory, and reasoning, with special emphasis on Piagetian and Soviet perspectives. Prerequisite: permission of instructor.

Ms. Uzgiris

Offered every other year

279 DEVELOPMENT OF CONSCIOUSNESS/ Seminar

Designed to examine critically various esoteric views concerning the development of consciousness (mind) and stages of consciousness, and to compare and contrast these views with those prevailing in current academic psychology under the rubrics of *cognitive development* and *personality development*. Among the views considered are those deriving from Eastern thought (Vedas, Yoga, Buddhism), Near Eastern thought (Sufism, Gurdjieff-Ouspensky, Arica) and Western religious and philosophical thought. Among the currently considered views with which these are compared and contrasted are those of Freud, Jung, Piaget, and Werner in psychology, and Cassirer in philosophy. Prerequisite: permission of the instructor. Psychology 101 is *not* a prerequisite.

Mr. Kaplan

Offered periodically

280 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY AND THEORY OF INTERPRETATION, PART I/ Seminar

A close, critical examination, in the light of current views on the nature of interpretation and the nature of signs and symbols, of various conceptions of human development advanced by a variety of thinkers. Although there will be a special emphasis on "depth developmental psychologies" (e.g., Freud, Jung, and their disciples and followers), consideration also is given to the developmental perspectives of Piaget, Werner, and Vygotsky. Focus is on the extent to which conceptions of development, descriptions of development, and "explanations" of development are rooted in tacit commitments of the various theorists to unexamined dogmas as to the nature of reality, the place of mind in nature, the order of values, and the bases for interpretation of signs and symbols. Among the hermeneuticists and semioticians whose work is examined are Cassirer, Gadamer, Ricoeur, Burke, and Culler. Two-semester course. Prerequisite: permission of the instructor.

Mr. Kaplan

Offered every other year

281 DEPTH PSYCHOLOGY, DEVELOPMENTAL THEORY AND THEORY OF INTERPRETATION, PART II

Continuation of Psychology 280. Prerequisite: Psychology 280.

Mr. Kaplan

Offered every other year

282 FUNCTIONAL NEUROANATOMY IN NEUROPSYCHOLOGY/

Lecture, Discussion

Designed to provide the student with an overview of the central nervous system, its structures and functions. The course also emphasizes a basic understanding of neurobehavioral symptoms and their relationship to neuropathology, including vascular, infectious, congenital, degenerative, and toxic insults to the central nervous system.

Ms. LaVecchio

Offered every year

283 HISTORICAL BACKGROUND OF CONTEMPORARY PSYCHOLOGY/ Seminar

Includes an appreciation of the generative ideas and world hypotheses underlying contemporary psychological approaches, and traces the earlier manifestations of these ideas and world hypotheses in intellectual history or history of ideas.

Mr. Kaplan

Offered every other year

284 PSYCHOLOGY AND RELATED DISCIPLINES/ Seminar

Deals with the linkages or purported linkages between psychology and literature, psychology and art, psychology and law, psychology and religion, etc. Designed to deal with the two-way relations between various disciplines and psychology and the challenges that these paired disciplines pose for each other. No prerequisites. Permission of the instructor.

Mr. Kaplan

Offered periodically

285 EMOTION AND INTERPERSONAL RELATIONSHIPS/ Seminar

What are emotions and how do they affect our behavior and our relationships? We will examine a number of theories about different emotions and with our relations with others. Prerequisite: permission of the instructor.

Mr. deRivera

Offered every year

286 INTERPERSONAL RELATIONS/ Seminar

Students examine everyday and scientific problems in the area of interpersonal relations. Data used is gathered by interview methods and through special analysis of the students' own experiences. The research methods used are qualitative in nature. Prerequisite: permission of the instructor. Corequisite: Psychology 213. Open to juniors, seniors, and graduate students only. The seminar is limited to fifteen students.

Ms. Dembo

Offered in spring

287 SELECTED PROBLEMS IN PHYSIOLOGICAL PSYCHOLOGY/ Seminar

This is an advanced tutorial course in research methodology including surgical and stereotaxic techniques, histology, EEG recording and analysis, and general methods for animal care. Prerequisite: permission of instructor.

Mr. Stein

Offered periodically

288 LOGICAL REASONING IN ADULTS AND CHILDREN/ Seminar

Covers in depth the current empirical findings and theoretical developments in the areas of logical reasoning in adults and children, especially in linguistic contexts. The course examines the extent to which logical principles are known by adults and children, the way in which that knowledge is represented mentally, and the way in which it may be acquired. The contrasts and connections with the Piagetian perspective are discussed. A

supplementary reading list is provided at the end of the course; the aim of the course is to enable students to continue reading on their own in these areas after this introductory background. Prerequisite: permission of the instructor. Limited to ten students.

Ms. Joffe Falmagne

Offered every other year

289 PSYCHOLOGY FROM THE VIEWPOINT OF AN ORGANISMIC-DEVELOPMENTALIST/ Seminar

This is a systematic, integrated overview of the field of psychology. Using organismic-developmental theory as an integrating framework, paradigmatic problems and methods in psychology will be surveyed with a major focus on the interrelationship of assumptions, hypotheses, and empirical findings in each area. A variety of phenomena of central interest to psychologists will be treated utilizing such concepts as levels of organization, person-environment systems, structure-function relationships. The course will be conducted in seminar fashion, and students will be expected to participate actively by analyzing relevant empirical work, giving presentations, etc. Prerequisite: permission of instructor.

Mr. Wapner

Offered periodically

296 DIRECTED RESEARCH IN PSYCHOLOGY/ Tutorial

An independent study for qualified students not in the Honors Program. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

297 DIRECTED READINGS IN PSYCHOLOGY/ Tutorial

An independent study for qualified students not in the honors program. Prerequisite: permission of instructor. Offered for variable credit.

Staff

Offered every semester

298 SUPERVISED PRACTICUM AND DIRECTED READINGS IN USE OF PSYCHOLOGICAL KNOWLEDGE AND METHODS IN PRACTICAL SETTINGS/ Practicum

Supervised practical experience in a work-setting relevant to a topic selected by the student from the subject matter of a psychology course taken previously, with associated bibliographical research. Only one practicum course credit can be applied to the major. May substitute in the major for one of the two required upper level seminars (in the 240-289 range). Evaluation principally on basis of term paper integrating relevant literature and practicum observations. Enrollment must be approved by course coordinator.

Mr. Baker, Coordinator; Staff

Offered every semester

299 HONORS IN PSYCHOLOGY: SENIOR YEAR/ Tutorial

Students carry out a research project under the direction of a member of the staff. Permission of the department is required.

Staff

Offered every semester

300 PROSEMINAR—DEVELOPMENTAL PSYCHOLOGY

Devoted to the presentation and critique of different developmental approaches to the individual and his/her ways of functioning in the world. Among the approaches considered are: (1) Piagetian, (2) organismic-developmental, (3) Soviet approaches to psychology, and (4) Freudian and neo-Freudian. The aim is to acquaint the participants with sympathetic expositions of diverse points of view and the application of these view-

points to empirical inquiry. It thus provides a basis for subsequent discussions in other seminars of the various ways of dealing with substantive issues (e.g., learning, moral action and moral judgment, language, the process of thinking). Several faculty members and advanced graduate students participate in conducting the seminar.

Staff

Offered every other year

301 PROBLEM, THEORY, AND METHOD IN PSYCHOLOGY/ Seminar

During the first half of semester one, each faculty member meets once with the class to discuss his/her perspectives and research. Students prepare brief reports characterizing the links among each faculty member's perspective, research, problems, methods, as well as a paper summarizing or integrating all of the faculty perspectives. Students also submit a brief statement on the status of their own research. During semester two, the ethics of the research process are discussed. Students formulate proposals on their M.A. theses and other research. Constructive criticism of these research proposals is offered by other members of the seminar. At the end of semester two, students submit their research proposals and written reports, which cover the status of their research.

Mr. Wapner

Offered every semester

302 STATISTICAL METHODS/ Seminar

The first semester is devoted to a review of the basic concepts of statistics, such as probability, statistical inference, sampling distribution, non-parametric statistics, and regression analysis. The second semester introduces analysis of variance, covariance, and experimental design.

Ms. Wiser

Offered every year

303 PROSEMINAR IN EXPERIMENTAL PSYCHOLOGY

An introduction to psychophysics, sensory processes, theories of perception, theories of learning, memory, language, information processing, higher mental processes, including the biological bases thereof. Designed to give students basic concepts in classical and contemporary issues in those areas. Several faculty members conduct the class, each being responsible for the section of the course in her/his area of specialization.

Staff

Offered periodically

304 FORMAL MODELS FOR PSYCHOLOGY/ Seminar

An introduction to formal methods and models applicable to psychological theorizing. The aim is to familiarize students with methods and formal ways of thinking of wide applicability across content areas, to indicate how various theoretical or empirical questions can be formalized in those terms, and to equip students with the sources and further readings that will enable them to pursue those topics further on their own. The topics covered include sets and relations, groups, lattices, fuzzy sets, formal grammars and automata, Markov chains, learnability theory, logic, and modal logic. Illustrative applications of those methods to various content areas are presented and worked out.

Ms. Joffe Falmagne

Offered periodically

310 PSYCHOPATHOLOGY OF CHILDHOOD AND ADOLESCENCE/ Seminar

Focuses on the origins and course of behavioral maladaptation during the first two decades of life. Problems of assessing and treating psychological disorders are viewed from a developmental perspective, with connections

being drawn between normal and abnormal growth processes. In particular, pathological symptomology is related to developmental issues such as early biological regulation, attachment, the family context, peer relations, intellectual development, self-control, sex-role differentiation, and personal efficacy. Selected topics include: childhood depression, schizophrenia, eating disorders, borderline states, aggressive and other emotional disturbances, and learning disabilities.

Mr. Damon, Ms. McGillin

Offered periodically

311(a) CLINICAL METHODS I/ Seminar

An introduction to psychometric and projective assessment.

Ms. Kellett

Offered every year

311(b) CLINICAL METHODS I/ Seminar

Introduction to clinical assessment and measurement (first half, first semester) and to psychotherapy (second half, second semester).

Mr. Cirillo

Offered every year

312 PSYCHOPATHOLOGY/ Seminar

An introduction to psychopathology—directly, through naturalistic observation and interviews with seriously disturbed individuals, and indirectly, through clinical and experimental reports related to description and explanation of psychopathology. A paper on some specific psychopathological phenomenon (e.g., delusions, hallucinations) is required.

Mr. Bibace

Offered every other year

315 IMITATION, INTERNALIZATION, IDENTIFICATION/ Seminar

Concerned with processes involved in self-other differentiation and the influence of significant others in the construction of the self. The writings of J. M. Baldwin, J. Piaget, G. H. Mead, A. Bandura, R. Schafer, M. Mahler, and J. Macmurray pertaining to these processes are discussed and relevant research evidence is considered.

Ms. Uzgiris

Offered every other year

316 SENSORY PROCESSES AND PSYCHOPHYSICS/ Seminar

Psychophysical concepts and methods are discussed, including magnitude estimation and multidimensional scaling. Particular attention is paid to those concepts and methods relevant to studies of taste, smell, and flavor.

Mr. Stevens

Offered periodically

317 BEHAVIOR IN INFANCY/ Seminar

Proceeds from an examination of the capacities for functioning in the neonate to a consideration of the changes in those capacities during ontogenesis with a view toward understanding the way infants organize their functioning in the world. Different topics are chosen for an in-depth examination in different years.

Ms. Uzgiris

Offered every other year

318 PIAGET'S THEORY/ Seminar

The basic concepts in Piaget's theory of development are critically studied through intensive reading of a selection of his writings. The historical roots of Piaget's concepts as well as their use by him throughout his lifetime are considered. The aim of the course is not familiarization with any particular topic studied by Piaget, but an in-depth examination of some of his theoretical ideas.

Ms. Uzgiris

Offered every other year

- 319 GENETIC-STRUCTURAL APPROACH TO MENTALITY/ Seminar**
Devoted to demonstrating how genetic structural approaches, viz., those of Marx, Freud, Jung, Cassirer, Werner, Piaget, and others, deal with the analysis of mentality as revealed in collective and individual activity. Special emphasis on the categories basic to all genetic structural approaches.
Mr. Kaplan
Offered every other year
- 322 PSYCHOLOGY OF LEARNING/ Seminar**
Theories, methods, and findings in the psychology of learning are discussed. Attention is given to controversial issues in discrimination learning.
Mr. Stevens
Offered periodically
- 323 NEUROANATOMICAL TECHNIQUES/ Laboratory**
An advanced course for students wishing to pursue research in biopsychology. The course provides training in the most recent neuroanatomical techniques that are necessary to evaluate the relationship between structure and function in the central nervous system. Students are provided with laboratory skills necessary to pursue research and further graduate training in psychobiology. Prerequisite: Psychology 230 or equivalent and permission of the instructor. Limited to five or six students.
Staff
Offered periodically
- 324 THEORIES OF PERSONALITY I: ISSUES IN PSYCHOLOGY THEORIES/ Seminar**
Covers three areas: (1) discussion of general issues in "theories" of personality, (2) further consideration of some issues in different theories (e.g., Freud), and (3) presentation and discussion of one alternative framework.
Mr. Wiener
Offered every other year
- 325 POLITICAL ISSUES IN NEUROSCIENCE RESEARCH/ Seminar**
Explores the ethics and values of neuroscience research as well as the political aspects of policy-making in the area of science and how to use important resources in grants preparation. The seminar is open only to graduate students and requires permission of the instructor. Field trips to Washington may be required as part of the course.
Mr. Stein
Offered periodically
- 326 ADVANCED TOPICS IN SOCIAL AND PERSONALITY DEVELOPMENT/ Seminar**
Focus is on the complementary processes of socialization and individuation through the life span. The individual's modes of relating to others and of constructing the self are traced through each phase of life. Developmental connections are drawn between early social relations and later social and personal experience.
Mr. Damon
Offered every other year
- 327 MORAL DEVELOPMENT/ Seminar**
The classical and contemporary approaches to the development of moral judgment and conduct in the individual are studied. Emphasis is on new and future directions for research in this area.
Mr. Damon
Offered periodically
- 328 SOCIAL COGNITION/ Seminar**
Focuses on contemporary approaches to the study of social reasoning in children, adolescents, and adults. Emphasis is on the individual's develop-

ing knowledge of interpersonal relations, the self, and other persons. Recent theoretical and empirical work is considered.

Mr. Damon

Offered every other year

329 GENERAL PSYCHOLOGY FROM THE ORGANISMIC-DEVELOPMENTAL PERSPECTIVE/ Seminar

In-depth exploration of general psychology in the context of a teaching practicum. To be taken concurrently with assisting in Psychology 101, General Psychology. Optional for students assisting in Psychology 101.

Mr. Wapner

Offered every semester

331 CLINICAL METHODS, II/ Practicum

Devoted to clinical experiences primarily with children. This includes intelligence and projective testing, diagnostic interviewing, and play therapy with children.

Mr. Ciottone

Offered every year

332 THEORIES OF PSYCHOTHERAPY/ Seminar

A comparison of various theoretical approaches to psychotherapy is considered.

Mr. Wiener

Offered every other year

333 NEUROPSYCHOLOGICAL ASSESSMENT/ Seminar

An overview of the structure and function of the central nervous system is presented. Emphasis is on quantitative and qualitative analyses of standardized and experimental tests of cognitive functions useful in differential diagnosis of neurological syndromes.

Ms. Kaplan

Offered every year

335 SOCIAL EVOLUTION/ Seminar

An ongoing colloquy on the evolutionary perspective designed for graduate students in psychology, biology, and geography. Each year the participants in the seminar agree on a conceptual problem they want to explore during the sessions of the seminar. In recent years, sample problems have included the possible significances of sociobiology to contemporary psychology, neo-Lamarckian approaches to evolutionary theory, the concept of levels of analysis, and the significance of song in the social life of birds. The seminar is offered in the spring, but interested graduate students should contact the instructor during the previous fall so that topics can be decided and reading materials can be made available.

Mr. Thompson

Offered every year

337 LOGICAL COGNITION/ Seminar

Philosophical work on the foundations of logic, and psychological, theoretical, and empirical work on logical reasoning and logical development are discussed. An introduction to some formal systems of logic is provided. Issues related to mental representation, development, and the relations between linguistic and nonlinguistic cognition, are given particular attention.

Ms. Joffe Falmagne

Offered periodically

338 SELF-CONCEPT AND SELF-PERCEPTION/ Seminar

An examination of research and theory on attributions to self and others and their relationship to action.

Mr. Laird

Offered every other year

339 THE EFFECTS OF EARLY EXPERIENCE/ Seminar

An examination of recent evidence pertaining to the effects of various circumstances during early ontogenesis in the course of perceptual, cognitive, and motivation development; aimed at conceptualizing these effects within a coherent framework. Evidence from studies of animals and humans is considered.

Ms. Uzgiris

Offered every other year

340 EMOTION AND INTERPERSONAL RELATIONS/ Seminar

Uses our knowledge of various emotional transformations (e.g., changes in self-boundary) to develop a precise language for the description of interpersonal phenomena such as merger-separation, dynamics, identification, and the dynamics of family constellations.

Mr. deRivera

Offered every other year

342 IMAGES, CONCEPTS AND PROTOTYPES/ Seminar

The following topics are addressed: imagery debate from philosophical (Dennet, Fodor) and psychological (Kosslyn, Pinker, Pylyshyn) points of view; relations between imagery and perception; the dual code/abstract code controversy; and shape categorization.

Ms. Wiser

Offered periodically

343 CHEMORECEPTION/ Seminar

Selected current topics in taste and smell are examined.

Mr. Stevens

Offered every year

351 CLINICAL METHODS, III/ Practicum

Practicum training in some special area, e.g., child clinical, family interactions, human neuropsychology.

Staff

Offered every semester

352 CLINICAL METHODS, IV/ Practicum

Practicum training in diagnostic interviewing in the Psychological Services Center.

Mr. Baker, Mr. Cirillo

Offered every semester

353 THEORY AND PRACTICUM IN BEHAVIOR MODIFICATION/ Practicum

Mr. Peterson

Offered every year

357 SYMBOLIC BEHAVIOR/ Seminar

The first semester deals with "primitive" forms of cognition and expression (representation, symbolization) as these are manifested in ontogenesis (language behavior, play, etc.) in the collective representations of nonliterature societies (as discussed by Levy-Bruhl, Levi-Strauss, and others), in oneriric states (dreams, hypnogogic conditions), in poetry, and in organic-and psychopathology. During the second semester the seminar is oriented toward research in the area of "primitive" thinking and expression. Only those registered during the first semester will be permitted to enroll during the second semester.

Mr. Kaplan

Offered every other year

366 MIND AND COGNITION/ Seminar

The underlying general question in this seminar concerns the organization of mind and the development of knowledge. Topics include logic and

mind, language and mind, learnability, innateness, induction, and culture and mind. Psychological and philosophical material is discussed.
Ms. Joffe Falmagne Offered periodically

380 RESEARCH IN PSYCHOLOGY/ Tutorial

Direction of individual students in their research.

Staff

Offered every semester

381 READINGS IN PSYCHOLOGY/ Tutorial

A critical analysis of literature in areas related to individual research.

Staff

Offered every semester

382 CONSULTATION IN FAMILY PRACTICE/ Practicum

Practicum in consultation to residents in family medicine.

Mr. Bibace

383 WORKSHOP ON PROBLEMS AND ISSUES IN CLINICAL PSYCHOLOGY/ Seminar

Clinical Staff

Offered every semester

385 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, I/ Practicum

Mr. Baker

Offered every semester

386 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, II/ Practicum

Mr. Baker, Mr. Bibace,

Mr. Cirillo, Mr. Wiener, Mr. Peterson

Offered every semester

387 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, III/ Practicum

Mr. Baker, Mr. Bibace,

Mr. Cirillo, Mr. Wiener, Mr. Peterson

Offered every semester

388 PARTICIPATION IN PSYCHOLOGICAL SERVICES CENTER, IV/ Practicum

Mr. Baker, Mr. Bibace, Mr. Cirillo,

Mr. Cirillo, Mr. Wiener, Mr. Peterson

Offered every semester

389 INTERNSHIP IN PSYCHOLOGY/ Practicum

Staff

Offered every semester

Russian

See Department of Foreign Languages and Literatures.

Screen Studies

See Department of Visual and Performing Arts.

Sociology

DEPARTMENT FACULTY

Ruth Harriet Jacobs, Ph.D., *chair*: gender, theory, field methods, gerontology

Sidney M. Peck, Ph.D.: social theory, industrial sociology, the peace movement

Robert J. Ross, Ph.D.: urban studies, political sociology, political economy, social policy

Elizabeth A. Stanko, Ph.D.: victimization of women, police-prosecutorial discretion, qualitative methodology

Andrea S. Walsh, Ph.D.: aging, women's studies, popular culture/mass communications

UNDERGRADUATE PROGRAM

Sociology is the study of society and of human variety: of structures, of histories, of biographies. To understand historical and social forces and their relation to individual lives is a requisite first step to acting freely, with reason and with historical consequence, in dealing with the cultural tasks of our times.

A major goal of the sociology program at Clark is to help persons attain a working knowledge of those theories, concepts, methods, and findings of sociology and related disciplines that are relevant to understanding and affecting the origins, development, maintenance, and change of social institutions and forms of social organization.

The department recognizes that not all students majoring in sociology, or taking a number of sociology courses, will want or need to obtain precisely the same kinds of experiences while at Clark. To this end, the program has built in a reasonable degree of flexibility, offering the student choices both of courses within general categories and of practicum experiences.

Many sociologists study society in order to change it. As a social science faculty, our department is committed to a humanistic perspective. We are concerned about the human situation and the relevance of our scholarship to societal issues and community problems as well as to our individual lives. We hope to understand the structure and dynamics of human society, on a small or large scale, so that we can contribute to those movements of change in our society that strive to liberate us all from the oppressive conditions of exploitation, discrimination, and alienation.

Sociology is a basis for many different kinds of careers and graduate schools. Feel free to discuss your post graduate plans with the faculty. Also, ask the department secretary for a copy of our department's publication *Suggestions for How to Get a Job with a B.A. in Sociology*.

The departmental major consists of nine courses within the department and five additional related courses in other departments selected from a set of focused options; students develop their selections through close consultation with a major adviser. The nine departmental courses are to be divided as follows:

- I) At least one introductory course chosen from:
Introduction to Sociology
Sociology of Everyday Life
- II) At least one advanced theory course chosen from:
Sociological Theory: Classical
Sociological Theory: Contemporary
Topics in Sociological Theory

- III) At least one methods course chosen from:
Research on Everyday Life
The Social Research Process
- IV) In their senior year or, in selected cases, before that, and in close consultation with their advisers, majors select one of the following options:
Option A, *Thesis*: This is the equivalent of four full courses in sociology; it is designed for selected students who wish to devote approximately 50 percent of their senior year to a major research problem.
Option B, *Internship*: This is the equivalent of from one to four full courses; it is designed for selected students who seek supervised field training in community or organizational settings.
Option C, *Senior Seminar*: This is the equivalent of two full courses and consists of a year-long seminar devoted to an examination of major themes and issues in sociology.
Option D, *Course Work*: For those students who do not choose any of the above options, nine sociology courses are required for the major.
- V) *Related Courses*
In close consultation with their advisers, students plan a program of additional courses that center on a coherent intellectual focus, which complements the substantive knowledge of conceptual skills of the department curriculum. Such foci will, most usually, consist of courses taken in another social science department, but they may be inter-departmental, e.g., "urban focus" could include courses in government, geography, history, and economics. The general expectation of the department is that such related course work will consist of five courses. This expectation may be higher for those who choose foci that entail taking elementary courses in preparation or as prerequisites.

GRADUATE PROGRAM

At the present time, the department is not offering advanced degrees.

COURSES

100 INTRODUCTION TO SOCIOLOGY/ Variable format

A general introductory course in the discipline of sociology, intended mainly for students who wish to gain a broad, general overview of the field, its areas of study, methods of inquiry, and conceptions and analyses of society. The central objective of the course is to encourage students to gain a sociological perspective on human conduct.

Mr. Ross, Mr. Peck

Offered every semester

101 SOCIOLOGY OF EVERYDAY LIFE/ Variable format

A version of introductory sociology in which students look at the ordinary events of their biographies and current lives to discover the patterns that come from the complex nature of social organization, culture, and social structure.

Ms. Jacobs

Offered every other year

105 SELF AND SOCIETY/ Lecture, Discussion

An examination of the relationship between the individual and the social system. The theories, methods, and findings of social psychology are examined as they illuminate the major, enduring themes that confront human beings over the life cycle individually and collectively: e.g., sociali-

zation and the development of identity, conformity, persuasion, aggression and altruism, prejudice, relationship of the individual in community.
Ms. Jacobs, Ms. Walsh

Offered every semester

110 INTRODUCTION TO WOMEN'S STUDIES/ Lecture, Discussion

An overview of the field of women's studies, focusing on sociological, historical, psychological, and economic dimensions of the female experience. This course explores: biosocial roots of the sexual division of labor, female socialization, education, sexuality, labor force participation, family roles, aging, the future of feminism.

Ms. Walsh

Offered every year

170 THE SOCIAL RESEARCH PROCESS/ Variable format

Provides a general introduction to various methods employed in sociological research. The emphasis is on qualitative methods such as participant observation and interviews. Students learn about these methods by using them in projects of interest to them. Majors may meet the methods requirement by selecting this course, but the course is also available to nonmajors who wish to learn how to investigate social life. Selected studies in various methods are assigned reading.

Ms. Stanko, Ms. Jacobs, Staff

Offered every year

200 DIRECTED READINGS IN SOCIOLOGY

Offered for variable credit.

Staff

Offered every semester

201 SPECIAL PROJECT: PEACE ACTION RESEARCH

This special project focuses on the interrelationship between theory and practice in peace studies. Theoretical understanding of the international arms crisis is tested in the practice of developing community organizing approaches to peace education outreach. Readings on the historical and sociological dimensions of the escalation toward nuclear war and the rise of mass movements to prevent the outbreak of nuclear war are utilized throughout the project.

Mr. Peck

Offered every other year

202 WORCESTER COMMUNITY STUDY/ Research seminar

A field research seminar oriented to descriptive evaluation and action research on any facet of the social structure of the Worcester community. Students who wish to add a research dimension to their special projects, internships, and practica are encouraged to participate in this seminar.

Mr. Peck

Offered every other year

203 SOCIOLOGY OF JEWISH AMERICANS/ Variable format

Deals with the historical and contemporary situation of American Jews with an emphasis on community and religious organizations, socioeconomic and cultural situations, and intergroup relations. Special topics of interest to students are explored, and students do guided library or field research.

Ms. Jacobs

Offered irregularly

209 SOCIOLOGY OF WOMEN'S WORK/ Variable format

Explores women's work roles and focuses on gender stratification in the labor market. Topics include the work of the housewife, the transitions of

women in and out of the labor force during the life cycle, career selection, displaced homemakers, and other areas of special interest to students.

Ms. Jacobs

Offered every other year

210 WOMEN AND CRIME/ Variable format

In traditional criminology, women's role in the criminal justice system is seldom a topic of focus. The course concentrates on the role of women, as criminal offenders and as the primary targets of male offenders. We explore the traditional felony crimes such as murder, robbery, victimless crimes, prostitution; treatment of women in courts and prison; victimology, such as rape and battered wives; and women workers within the criminal justice system, such as policewomen.

Ms. Stanko

Offered every year

215 RESEARCH ON EVERYDAY LIFE/ Variable format

Examines the world of everyday life. As participants and observers, students design and conduct a research project. We explore various analytic approaches to analyzing the collected data, including dramaturgical and ethnomethodological frameworks.

Ms. Stanko

Offered every other year

225 SOCIOLOGY OF SEX ROLES/ Variable format

The focus of the course is on the sex role socialization process and gender stratification in contemporary American society. Courtship, marriage, and divorce are discussed. Work roles are considered.

Ms. Jacobs

Offered every other year

239 SOCIAL GERONTOLOGY/ Lecture, Discussion

This course focuses upon the multiple realities of aging in human society. Specific attention is devoted to the history and social role of the aged in the United States. The impact of social structure upon the aged requires examination of key issues confronting the elderly such as employment, retirement, income, housing, health care, education, sexuality, and death. A variety of social programs designed for the aged are critically evaluated.

Ms. Walsh

Offered every year

241 SOCIOLOGY OF MEDICINE/ Variable format

Examines health and illness as social phenomena. Topics to be covered include social causes of disease, theories of individual response to illness, and the sociology of institutions that attempt to care for and cure the sick. The course also addresses problems in the health care system at the national level and explores solutions to the mounting "crisis" in the provision of health services. Useful to those with general interest, as well as students considering health-related careers.

Staff

Offered irregularly

242 FIELDWORK SEMINAR IN SOCIAL GERONTOLOGY

Supervised placements for students within the aging network are supplemented by appropriate readings, written assignments, and group discussion.

Ms. Walsh, Ms. Jacobs

Offered every year

243 POLITICAL SOCIOLOGY/ Variable format

Examines structures of social class and power in relationship to stability, conflict, and change in American government. Focuses on government

relationship to businesses, the economy, and other political interests and behavior. Compares the United States to other industrial countries.

Mr. Ross

Offered every year

246 SOCIAL PLANNING AND SOCIAL POLICY/ Variable format

Introduces the field of social policy. Each semester focuses on a particular theme. Past themes include: poverty, urban planning and social policy, community planning.

Mr. Ross

Offered every other year

247 CITIES AND SUBURBS/ Variable format

Introduces urban sociology. Examines structure and development of American metropolitan areas and community power, with special attention to changing functions of city and suburb. Examines different ways of life in city and suburb.

Mr. Ross

Offered every year

248 SEMINAR IN GLOBAL CAPITALISM

Examines processes of economic and social development in two regional frameworks: changes in the structure of industrial regions of the advanced capitalist countries and changes in the structure of developing and more peripheral regions. The conceptual framework is that of a global capitalist system undergoing significant transformation in the deployment of labor and capital. Also listed for credit as Government 289 for fall 1984.

Mr. Ross, Mr. Trachte

Offered every year

250 CRIMINOLOGY/ Variable format

Explores the nature of crime in society, theories about victims of crime, theories about why people commit illegal acts, and the kinds of crime that occur in American society.

Ms. Stanko

Offered every other year

251 SOCIOLOGY OF MASS COMMUNICATION/ Lecture, Discussion

Analyzes the history and development of the modern media of mass communications and explores key issues in the sociological analysis of popular culture. A variety of theoretical and methodological approaches to the sociology of mass communications is presented. Through intensive in-class analyses of film and television as cultural documents, students learn to analyze the relationship between form and content in the production of cultural meaning. This course focuses primarily on visual media; extra screening times are required.

Ms. Walsh

Offered every year

254 SOCIOLOGICAL THEORIES OF HEALTH AND ILLNESS/ Variable format

Many sociologists have provided powerful analyses of health and illness behavior, and of the contemporary medical care system. This seminar focuses on major attempts to apply sociological theory to these phenomena. Three important theoretical models are examined in depth: structure-functionalism, symbolic interactionism, and Marxist approaches.

Staff

Offered irregularly

255 THE FAMILY/ Variable format

Critical, historical, and feminist perspectives on the institutions of marriage and the family. The seminar considers comparative, historical, and

other analyses of the social role of women vis-a-vis the role relationships inherent in marital institutions.

Staff Offered irregularly

256 CLASS, STATUS, AND POWER/ Variable format

An analysis of the major dimensions of social stratification in contemporary society. Economic class, social status, power, class consciousness, social mobility, and the consequences of class difference are studied.

Mr. Peck Offered every other year

257 CITIES IN GLOBAL PERSPECTIVE/ Variable format

There are four dimensions of comparison upon which this course is based: historical; cross-national within advanced capitalism; a cross-system of social relations, i.e., capitalist as compared to socialist urbanization; and finally, a contrast between the processes and structures of urbanization in the First and Third Worlds.

Mr. Ross Offered every year

260 SOCIAL PSYCHOLOGY OF IDENTITY/ Variable format

Examines the concept of self or identity as it develops within the social world. Identity is approached from a life span/developmental perspective, a comparative perspective, and a social psychological perspective. The course attempts to join a theoretical with an experiential process of teaching-and-learning. Also listed for credit as Education 259.

Ms. Jacobs Offered irregularly

261 CRIMINAL JUSTICE IN AMERICA/ Variable format

The criminal justice system is a complex set of roles and perspectives, traditionally viewed as an integrated unit processing individuals arrested for criminal offenses. This course is designed to view the criminal justice system as a topic for inquiry into social relations of institutions, which are studied as isolated agencies (i.e., law enforcement, court process, corrections) and as a whole, "integrated" system.

Ms. Stanko Offered every year

263 DEVIANCE/ Variable format

This course has two fundamental objectives: (1) to introduce the student to the literature, research, and conceptual problems in the field of deviance and (2) to examine conceptual frameworks out of which contemporary definitions of deviance emerge.

Ms. Stanko Offered every other year

265 SOCIAL MOVEMENTS/ Variable format

Discusses the general characteristics of modern social movements, with the New Left and other protests of the sixties used as extended case examples. Problems of recruitment, organization, and ideology are analyzed. The form of the course depends on the size of registration.

Mr. Ross Offered irregularly

282 INDUSTRIAL SOCIOLOGY/ Variable format

Focuses on the study of social relations in the industrial setting. The course covers the research tradition beginning with the human relations school and extending through the sociology of work and occupations. A special focus of the course is workers' organizations and the sociology of labor.

Mr. Peck Offered every other year

290 SOCIOLOGICAL THEORY: CLASSICAL/ Variable format

Beginning with the European writings of the early sixteenth century and extending to the expression of social theory at the turn of the twentieth century, the course focuses on the way in which certain social themes dealing with human relationships were treated by the classic works of outstanding European social philosophers and theoreticians. These social themes refer to issues of value consensus and social conflict, established power and rebellious disorder, the social person and the alienated human. Oriented to a sociology of knowledge perspective, the range of ideas, beginning with Machiavelli and More and ending with Weber and Simmel, is considered in the context of the history and social structure of national capitalism as it emerged in the specific settings of Italy, England, France, and Germany. Meets social theory requirement for majors.

Mr. Peck

Offered every other year

291 SOCIOLOGICAL THEORY: CONTEMPORARY/ Variable format

Social developments in the United States during the post-World War II epoch have given rise to a variety of theoretical views in the field of sociology. Diversity of approach and fragmentation of theoretical stance are related to significant changes in social structure and political economy of the United States during the past three decades. The relationship between social theory and political ideology is considered throughout.

Mr. Peck, Staff

Offered every other year

295 GROUPS AND FAMILY PROCESSES/ Variable format

Combines theoretical and experiential modes designed to familiarize the student with the skills and techniques involved in work with families and other small groups. Also listed for credit as Education 295.

Staff

Offered every other year

296 ADVANCED TOPICS IN CRIMINAL JUSTICE/ Variable format

Concerned with an in-depth view of the current issues in the field of criminal justice. Students are responsible for developing a project, to include on-site experience.

Ms. Stanko

Offered periodically

297 TOPICS IN SOCIOLOGICAL THEORY/ Variable format

For those who have already taken classical or contemporary theory and also for those who have not done in-depth study of particular theorists but wish to do so. Meets theory requirement for majors.

Mr. Ross, Ms. Jacobs

Offered every other year

298 SENIOR SEMINAR IN SOCIOLOGY

A year-long seminar devoted to the examination of major themes and issues in sociology. It is the equivalent of two full courses.

Staff

Offered irregularly

299 THESIS SEMINAR

Combines seminar with independent study on selected topics and is intended for senior sociology majors. Each member of the sociology faculty offers a set of topics and thesis issues; students should sign up with the faculty member whose areas of interests are most suited to their own. Emphasis in the course is upon independent work undertaken with faculty guidance and supervision. It is possible to take this as a year-long course that results in the submission of a thesis, thereby making selected students

eligible to be considered for departmental honors in sociology. Students are awarded four full course credits.

Staff

Offered every year

299.9 INTERNSHIPS IN SOCIOLOGY

Supervised field training in community and organized settings. This is the equivalent of from one to four full courses in sociology. Variable credit.

Staff

Offered every semester

Spanish

See Department of Foreign Languages and Literatures.

Theater Arts

See Department of Visual and Performing Arts.

Visual and Performing Arts

Albert A. Anderson, Ph.D., *chair*: aesthetics, ancient philosophy, metaphysics

Education in the arts takes two fundamental directions at Clark: traditional scholarly pursuit (encompassing history, criticism, and philosophy of the arts) and the creative activity of studio or performance. Students interested in these pursuits may major or concentrate in a variety of program areas (listed below) offered by the Department of Visual and Performing Arts. They may also use a major in a given area—such as music, screen studies, theater arts, or visual art—as the core for a preprofessional program. Or, a student may cross traditional disciplinary lines by individually designing a major or concentration that includes two or more areas of study. The department also invites students majoring in nonarts areas to participate in its programs and courses, and to attend its many art exhibitions; film presentations; and musical, dance, and theatrical performances.

AESTHETICS

PROGRAM FACULTY

Albert A. Anderson, Ph.D.: aesthetics, ancient philosophy, metaphysics.

ADJUNCT FACULTY

Ellen Berezin, M.A.

Courses in aesthetics offer cross-disciplinary study of the arts designed to foster an understanding of what is common to the various modes of artistic creation as well as what separates them; to reflect upon the nature and presuppositions of critical and historical analysis of the arts; and to investigate the relationship between the arts and other aspects of human culture, such as politics, religion, science, and philosophy.

VPA 100 THE AESTHETICS PERSPECTIVE/ Lecture, Discussion

A cluster of courses, representing several artistic disciplines, of special interest to students fulfilling the aesthetic perspective requirement of the Program of Liberal Studies. It is designed to introduce students to what is common as well as what is different in the various arts media. Faculty, and specific arts disciplines covered, change annually.

Staff

Offered every year

149 INTRODUCTION TO AESTHETICS/ Lecture, Discussion

An examination of representative theories of the arts, aesthetic experience, creativity, and critical evaluation of art works. Alternative philosophical positions (e.g., existentialism, idealism, Marxism, empiricism) are studied through primary sources.

Mr. Anderson

165 CONTEMPORARY ARTS

An examination of contemporary innovations and movements in the visual arts. Related developments in arts such as film, dance, and architecture will be included to suggest the many possibilities for communication open to the contemporary artist.

Mr. Souza

231 FILM THEORY

See listing under Screen Studies 231.

245 SEMINAR: AESTHETICS

Advanced topics of central importance to philosophical aesthetics are examined. Possible topics include: philosophy of architecture, philosophy of painting and sculpture, philosophy of literature, philosophy of music, philosophy of theater, philosophy of screen art, philosophy of dance, creativity in art and science, philosophy of criticism, the cognitive role of the arts, the arts in human culture, philosophy of art history, space and time in art and science.

Mr. Anderson

Offered every semester

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECT

Staff

2999 INTERNSHIP

Staff

ART HISTORY AND CRITICISM

PROGRAM FACULTY

Samuel P. Cowardin III, Ph.D., *program director*: Renaissance, oriental art
Bonnie L. Grad, Ph.D.: nineteenth- and twentieth-century art
Rhys F. Townsend, Ph.D.: ancient art and archaeology

PART-TIME FACULTY

Jean Borgatti, Ph.D.

ADJUNCT FACULTY

Paul Burke, Ph.D.

John Conron, Ph.D.

Courses in art history provide an introduction to the discipline and opportunities for more specialized study. They offer enrichment for non-majors as well as a core of knowledge for majors. Through systematic close examination of works of art in their cultural context, students develop visual sensitivity and critical skills while building a fundamental command of the field.

The major in art history and criticism can serve as a meaningful humanistic focus in the liberal arts for students who appreciate art and are interested in its social, cultural, and historic ramifications. For highly motivated students interested in teaching, museum and gallery work, arts conservation, or arts management, it can also provide a foundation for graduate study. Majors may concentrate in areas such as ancient, Renaissance, and modern art history or study other areas of special interest.

At present, admission to the major requires at least a grade of B in *Introduction to Western Art* (or equivalent courses or superior advanced placement performance) and approval of the program faculty. Students must then complete: four art history courses in a single area (e.g., ancient, Renaissance, modern) including the Senior Project; four art history courses outside this area; four courses outside art, related to the area of concentration; and two studio courses. In the case of double majors, each of the four groups is reduced by one course, for a total of ten.

COURSES

1101 INTRODUCTION TO WESTERN ART I/ Lecture, Discussion

Surveys ancient, medieval, and early Renaissance art. The first weeks are devoted to an examination of the basic elements in the visual arts, and to certain fundamental matters of terminology and methodology, with special emphasis on those aspects to be encountered in works discussed during the semester. Selected works are then studied as exemplars of style and artistic quality in the context of the leading ideas of their respective eras. Corequisite weekly discussion sections, many held at the Worcester Art Museum.

Mr. Townsend

Offered every year

1102 INTRODUCTION TO WESTERN ART II/ Lecture, Discussion

Following a review of elements and principles in the visual arts, selected works of Western art from the High Renaissance to the present are studied in historical and cultural context. Corequisite discussion sections, many held at the Worcester Art Museum.

Mr. Cowardin

Offered every year

102 ART OF AFRICA, OCEANIA, AND NATIVE AMERICA/ Lecture, Discussion

Focuses on the art of the Yoruba of Southern Nigeria, Northwest Coast Native Americans, and selected cultures of New Guinea. Aims to develop in the student an appreciation for the art forms, cultural settings, and distinctive aesthetic in non-Western culture. Where possible, students will be expected to make aesthetic and stylistic judgments concerning original material.

Ms. Borgatti

Offered every year

103 ARTS OF BLACK AFRICA/ Lecture, Discussion

An introduction to the major traditions of art in the western Sudan and Guinea coast; the Niger delta and equatorial forest; the southern savanna and southern and eastern African fringe. Emphasis rests on formal, conceptual, and historical links between the cultures and art forms considered.

Ms. Borgatti

Offered every year

105 THE AEGEAN WORLD/ Lecture, Discussion

An introductory survey of architecture, sculpture, and painting in Egypt, Mesopotamia, and the Aegean during the Bronze Age, the course covers the Old and New Kingdoms of Egypt; the great dynasties of Sumer, Akkad, and Babylon, and the cultures of the Aegean islands, Crete, and mainland Greece. Examines and compares artistic forms and traditions of each region in order to shed light on the individual religious and social contexts in which they evolved and to reveal the differing conditions under which these civilizations emerged. Highlights the renowned archaeologists whose discoveries have illuminated the history and artifacts of these lands.

Mr. Townsend

Offered periodically

106 INTRODUCTION TO ARCHAEOLOGY/ Lecture, Discussion

Concentrating on the Mediterranean region, the course traces the history and methods of this discipline—emphasizing its unique combination of the sciences and the humanities—from its faltering but enthusiastic first steps to its technologically advanced state today. Selected case studies, which involve the student's active participation, will demonstrate how archaeology has illuminated the ancient world. A special concern will be the newly developed field of underwater archaeology, which has contributed so much to our understanding of the history of seafaring.

Mr. Townsend

Offered every other year

109 CLASSICAL MYTH AND THE GREEK IDEAL/ Lecture, Discussion

Investigates a select number of classical myths and the concept of the "Greek ideal" as expressed in art, both in classical Greece and Rome and in various later periods, including the twentieth century. The myths are approached from the standpoint of origin and significance, changing modes of representation, and manipulation for political purposes. The concept of the Greek ideal is also examined both as it originally developed and as it was conceived in subsequent ages. Throughout, the changing attitudes towards the classical world and the significance of the classical tradition in art and history are emphasized. Field trips to area museums.

Mr. Townsend

Offered every other year

110 ANCIENT GREEK ART AND ARCHITECTURE/ Lecture, Discussion

This intensive survey extends chronologically from the Bronze Age in the third millennium to the Hellenistic period in the first century B.C.; geographically it reaches from Greece itself westward to the Greek cities of South Italy and Sicily, and eastward to the Hellenized lands of Asia Minor, Egypt, and the Near East. Within this context, discussion includes the concept of artistic originality and stylistic development, the relationship between art and politics, and the contribution of Greek art to the subsequent history of the visual arts in the Western world. Field trips to the Worcester Art Museum and the Museum of Fine Arts in Boston.

Mr. Townsend

Offered every other year

111 ANCIENT ROMAN ART AND ARCHITECTURE

See listing under Classics 111.

CL76

120 ITALIAN RENAISSANCE ART: FIFTEENTH CENTURY/ Lecture, Discussion

Concerns art in the context of developing humanism and rationalism, mainly in Florence, but with excursions into northern Italy. The aim is to delineate the character of early Renaissance art and to distinguish its principal stylistic currents as they move toward confluence in the High Renaissance. Particular attention is given to the ideas of Alberti and some of the intellectuals in the circle of the Medici. Architecture, sculpture, and painting receive approximately equal emphasis.

Mr. Cowardin

Offered every other year

121 ITALIAN RENAISSANCE ART: SIXTEENTH CENTURY/ Lecture, Discussion

The great figures of High Renaissance art in Florence and Rome are the focus of the first part of the course. It tries to define, through readings and discussion, the special aesthetic qualities of this particular "classic moment," seen against the political and intellectual background. The course also must confront the difficult questions relating to the evolution of Mannerism, as well as the definition of this phenomenon. Finally, the scene shifts briefly to Venice.

Mr. Cowardin

Offered every other year

122 MICHELANGELO AND THE HIGH RENAISSANCE/ Lecture, Discussion

Concentrates on Michelangelo's work in architecture, sculpture, and painting, taking into account personal, religious, intellectual, and political influences on his life. His style will be viewed in relation to the Renaissance background as well as the Mannerist trends of the sixteenth century.

Mr. Cowardin

Offered every other year

140 MODERN ART: NINETEENTH CENTURY/ Lecture, Discussion

A survey of the revolutionary movements in European art from neoclassicism to postimpressionism, with special emphasis on the development of the avant-garde. Both the formal characteristics of styles and the cultural and social context from which they emerged are examined. Attention is paid to the reciprocal relationship between the visual arts: between painting and printmaking throughout the century and painting and photography after 1845.

Ms. Grad

Offered every other year

142 MODERNISM/ Lecture, Discussion

A study of the modern imagination as it developed in the art of Europeans and Americans from the turn of the century to World War II. Two major issues, expressed as polarities in content and form, are explored in class lectures and "modernist workshops"—on the one hand, the incorporation of the non-art object (newspapers, playing cards, hat racks) into the art object, as in Picasso's and Braque's cubist collages and Duchamp's readymades; on the other, the elimination of reference to the object, as in the abstract, nonrepresentational painting of Kandinsky, Malevich, and Mondrian.

Ms. Grad

Offered every other year

143 ART SINCE 1945/ Lecture, Discussion

A survey of the major movements of contemporary American and European art, including abstract expressionism, environments and happenings, pop art, minimalism, earth art, and the new realism. The increasing importance of the commercial environment, popular culture, and technology are explored as a major theme in the art of the sixties. Each student assumes the separate roles of artist, critic, and art historian—creating an object, criticizing an exhibit or work of art, and formally analyzing a museum work—as a means of coming to terms with relevant formal and critical issues.

Ms. Grad

Offered every other year

144 IMPRESSIONISM/ Lecture, Discussion

Under Napoleon III (1851-1870), Paris was physically transformed into a modern city of tree-lined, spacious boulevards, parks, landscaped squares, and public gardens. Impressionists painted not only the countryside and seaside resorts, but also the beauty and richness of this urban environment. This course explores in depth the styles of Manet, Monet, Renoir, Degas, Sisley, and Pissarro, and examines the formal and coloristic characteristics of these artists as well as the particular social, economic, and political context from which urban and rural impressionism emerged. Prerequisite: Art 140 is recommended.

Ms. Grad

Offered every other year

148 MODERN LANDSCAPE ART: 1750-1970/ Lecture, Discussion

Traces the development of landscape painting in Europe and America from 1750 through the recent past. Focuses on both the stylistic development of this art form and the cultural and social context in which it originated and flourished. Examines historical and social factors including urbanization and the birth of modern town planning, sanitation, water supply and park design; industrialization and technology; the rise of tourism and the "commercialization" of the landscape. Emphasizes the role of landscape in the development of twentieth-century painting.

Ms. Grad

Offered every other year

149 URBAN AND PASTORAL VISIONS IN TWENTIETH CENTURY ART/ Lecture, Discussion

This advanced seminar explores these two distinct sensibilities in twentieth-century painting and the cultural sources of such visions. At one extreme are pastoralists, who retreat to the countryside to create their landscape art in solitude; Georgia O'Keeffe and Milton Avery are among them. At the other are urbanists such as Stuart Davis and Joseph Stella, who embrace the excitement of city life, its noise and dynamism, in their lives and art. Readings include a variety of sources outside the history of art. Prerequisite: permission of instructor.

Ms. Grad

Offered every other year

150 INTRODUCTION TO ORIENTAL ART: ANCIENT NEAR EAST AND INDIA/ Lecture, Discussion

The major part of the course deals with Indian art from prehistoric times through the period of the Moslem dynasties, and with the spread of Indian culture into Indo-China and Indonesia. Monuments of Buddhist and Hindu art are studied and discussed in the light of the faiths which inspired them. The philosophy, mythology, and iconography of these faiths are the subjects of background readings intended to inform the discussion.

Aside from its intrinsic value, this material is basic to further study of Buddhist art in China and Japan.

Mr. Cowardin

Offered every other year

151 INTRODUCTION TO ORIENTAL ART: CHINA AND JAPAN/

Lecture, Discussion

The greater part of the course (about two thirds) is devoted to the art of China from the beginnings through the Yuan Dynasty. As an introduction, it does not pretend to be complete, but singles out for study certain periods and classes of objects, such as Shang and Chou bronzes, Buddhist sculpture, and Sung paintings, at the expense of others, such as ceramics and later paintings. The same approach is carried over to Japan in the remainder of the course, where emphasis is placed on Buddhist sculpture, narrative and landscape scroll paintings, and color woodblock prints.

Mr. Cowardin

Offered every other year

161 ANCIENT CITIES AND SANCTUARIES/ Lecture, Discussion

An introduction to the great urban and religious centers of the ancient world. The concept of the city is examined as it first evolved in the Near East and as it developed in classical Greece and Rome. Emphasis is placed both on the design and structure of urban spaces and on factors affecting town planning. The famous ancient sanctuaries are discussed not only as areas of religious worship, but as centers of cultural activity involving theater, art, athletics, and politics. Throughout, both cities and sanctuaries are viewed in their historical setting as part of the larger civilizations which nurtured them.

Mr. Townsend

Offered every other year

199 SENIOR PROJECT IN ART HISTORY

Required of all majors in art history and criticism.

Staff

Offered every semester

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2996 SPECIAL TOPICS

Staff

2999 INTERNSHIP

Staff

STUDIO ART

PROGRAM FACULTY

Donald W. Krueger, M.F.A., *program director*: foundation studies, drawing, painting, illustration

Sarah Buie, M.F.A.: museum design and interpretation, textile history, design history and theory

PART-TIME FACULTY

Elli B. Crocker, M.F.A.

Mary L. Graham, M.F.A.

Michael Hachey, M.F.A.

Leon Nigrosh, M.F.A.

Ron Rosenstock, M.A.

Jeffrey Schiff, M.F.A.

Frederick A. Simon, B.S.

Charles H. Slatkin, M.F.A.

Al Souza, M.F.A.

Patricia E. Woods, M.A.

Courses and programs in studio art and design offer opportunities for students to acquire resources for visual thinking and communication and to engage in personal creative expression. They provide a foundation for the future professional artist or designer, offer studio experience for art majors, and serve as a valuable part of education in the humanities, the social sciences, or the natural sciences.

Courses are offered on the Clark campus, at the Worcester Art Museum, and at the Worcester Craft Center. Foundation and Area-Level courses, and certain advanced courses, are available to nonmajors, special students, and students with combined or self-designed majors. Certain studio courses satisfy the *aesthetic perspective* of the Program of Liberal Studies. Internships in art studios, advertising agencies, communications and arts agencies, museums, and galleries are available.

Throughout the year, Little Center Gallery presents exhibitions of work by contemporary artists. Students may exhibit in the Cohn-Anderson Gallery in the library. The Craft Studio in the Student Activities Center offers opportunities for extracurricular involvement in arts and crafts activities.

The Studio Art Major Programs are designed to meet a number of student needs and interests: preprofessional preparation for graduate study and/or professional careers in art, design, art education, arts management, art therapy, and other arts-related fields; the satisfaction of personal interest in art and design; and significant involvement in the creative process.

THE BACHELOR OF FINE ARTS DEGREE PROGRAM

For students with a strong interest in art and design and a serious commitment to intensive study during their college careers. It is a *preprofessional* program within a liberal arts context, which provides resources for future career decisions and directions. It involves investigation of alternatives: graphic design, photography, painting, illustration, etc., within the studio program and in the arts, the humanities, and the social and physical sciences. Admission to the program is selective, and students are expected to maintain a professional level in their studio work as well as a high academic average. A strong advising program assists students in curriculum planning, in identifying areas of major interest, and in preparing for graduate study or career. Areas of concentration include drawing and painting, graphic design, illustration, photography, printmaking, sculpture, and screen production. Required for the B.F.A.: 16 studio courses including four Foundation Studies and two Senior Studios. In addition, two art history courses, two nonstudio courses from the Department of Visual and Performing Arts, and a noncredit senior thesis are required.

THE BACHELOR OF ARTS DEGREE PROGRAM

Combined with a major in studio art, this program is for students who see art as a part of liberal education or for those who may be undecided about

professional interest and commitment. The B.A. program can accommodate interest in art education, art therapy, medical illustration, arts management, film and video, theater design, or individually-designed or double majors. Required for the B.A.: ten studio courses, including two Foundation Studies; two art history courses; and two nonstudio courses from the Department of Visual and Performing Arts. (No more than twelve studio courses will be counted toward graduation.)

THE DIPLOMA PROGRAM

This program, which can be completed in three years, is for students who wish to concentrate in studio or who do not see the liberal arts as critical to their pre-professional education. Under certain circumstances Diploma Program students may transfer to the B.F.A. program, or, following graduation, they may elect to continue their studies in the B.F.A. program or the Bachelor of Arts in Liberal Arts Degree Program in the College of Professional and Continuing Education. Diploma requirements are under review; for students entering in Fall 1984, they are: twenty-three studio courses including four Foundation Studies and two Senior Studios; one art history course; and a noncredit senior thesis. Up to five liberal arts courses may be substituted for studio in the three-year sequence.

All studio courses require work in addition to scheduled studio hours. Students should expect to spend at least twelve hours a week in work for each studio course.

Foundation Studies: First year courses, designed to provide a foundation in visual language and to develop the visual vocabulary and thought processes fundamental to future studio work. Required for B.F.A. and Diploma Program students; recommended for B.A. studio majors and as an introduction to studio art and design for students from other disciplines. Open to nonmajors.

Area Studios: Courses that provide an introduction to the various areas of studio specialization. Area studios are prerequisites for the more advanced major level studios. They include a variety of specialized enrichment courses, not all of which are offered regularly, and courses from other programs and departments, for which students may receive studio credit. Open to nonmajors.

Major Studios: Advanced courses that have prerequisites and are not usually open to nonmajors without evidence of appropriate preparation for advanced studio work.

Senior Studios: Advanced courses in which students work independently in their areas of specialization toward the development of a body of professional-level work or a graduate school portfolio.

NOTE: Some Area, Major, and Senior studio courses are offered only when students have completed the necessary prerequisites for taking them; therefore, unless otherwise indicated, they are not offered on a regular basis. Some, but not necessarily all, of these courses will be offered during 1984-85 and 1985-86. At the discretion of the program director certain studio courses may be repeated for credit.

In addition to the prerequisites listed below, all studio courses require permission of the instructor and/or program director.

COURSES

100 TWO-DIMENSIONAL DESIGN AND COLOR/ Studio, Lecture, Discussion

(Foundation) An introduction to visual language and the creative process; a foundation for future studio work and/or original creative thought and

action. Problems in figure-ground, color relationships, and two-dimensional form and pattern. Formerly *Visual Design I*. Open to nonmajors.

Mr. Krueger, Ms. Graham,
Mr. Hachey, Staff

Offered every year

101 THREE DIMENSIONAL DESIGN AND SPACE/ Studio, Lecture, Discussion

(Foundation) An introduction to visual language through study of depth and plastic illusion and basic three-dimensional structural principles and forms. 100 is not a prerequisite. Formerly *Visual Design II*. Open to nonmajors.

Mr. Krueger, Ms. Graham,
Mr. Hachey, Staff

Offered every year

102 VISUAL STUDIES-DRAWING/ Studio, Lecture, Discussion

(Foundation) An investigation, through graphic re-presentation of the subjective aspects of visual language, of contemporary concepts of drawing and basic concepts of space and the picture plane. Formerly *Visual Studies I*. Open to nonmajors.

Mr. Krueger, Ms. Graham,
Mr. Hachey, Staff

Offered every year

103 VISUAL STUDIES-PAINTING/ Studio, Lecture, Discussion

(Foundation) Collage and elementary painting problems are used to investigate contemporary attitudes and modes of visual thinking. 102 is not a prerequisite. Formerly *Visual Studies II*. Open to nonmajors.

Mr. Krueger, Ms. Graham,
Mr. Hachey, Staff

Offered every year

120 PHOTOGRAPHY-THE ZONE SYSTEM/ Studio, Lecture, Discussion

(Area) An introduction to the art and craft of black and white photography emphasizing the zone system and including camera operation, developing, printing, and finishing techniques. Students must have a variable setting 35mm or 2¼ × 2¼ camera with a built-in or hand-held exposure meter, tripod, and cable release, and must provide their own film and paper. Materials (lab) fee. Formerly *Photography I*. Open to nonmajors.

Mr. Rosenstock

Offered every year

121 PHOTOGRAPHY/ Studio, Lecture, Discussion

(Area) Basic black and white photography—visualization, camera operation and darkroom techniques. Students must have equipment as noted in 120 and provide their own film and paper. May be taken independently of 120. Materials (lab) fee. Open to nonmajors.

Mr. Slatkin

Offered every year

124 INTRODUCTION TO GRAPHIC DESIGN/ Studio, Lecture, Discussion

(Area) An introduction to the process of solving communication problems through the synthesis of verbal and visual information. Discussion of design forms (book, poster, brochure, sign, map, exhibition) from historical and aesthetic viewpoints; introduction to selected media (typography, drawn and photographed images, color) through studio exercises and applied problems. Formerly *Graphic Design I*. Open to nonmajors.

Ms. Buie

Offered every year

125 GRAPHIC DESIGN PROJECTS/ Studio, Lecture, Discussion

(Area) Intermediate level projects in Graphic Design. Open to nonmajors.

Prerequisite: 124 or permission of the instructor.

Ms. Buie

Offered every year

128 DRAWING/ Studio, Lecture, Discussion

(Area) The study of drawing with emphasis on the nature of drawing as opposed to the representation of nature—an analytical approach using object, figure, landscape, and imaginative imagery. Open to nonmajors.

Ms. Crocker, Staff

Offered every year

129 DRAWING/ Studio, Lecture, Discussion

(Area) An intermediate-level course stressing the understanding of drawing, space, and invention in both objective and nonobjective form. Open to nonmajors. Prerequisite: 102 and/or 128 and/or permission of the instructor.

Ms. Crocker, Staff

132 PAINTING AND DRAWING/ Studio, Lecture, Discussion

(Area) An introductory course investigating material and subject possibilities and beginning, through painting and drawing, a process of artistic experimentation and self-examination. Individual and group critiques, discussions, and experimentation with contemporary painting idioms. Open to nonmajors.

Ms. Crocker, Mr. Souza,
Staff

Offered every year

133 PAINTING/ Studio, Lecture, Discussion

(Area) A continuation of 132 with increasing emphasis upon individual development and direction. Prerequisite: 103 or 132 or permission of the instructor. Open to nonmajors.

Ms. Crocker, Mr. Souza,
Staff

136 STRUCTURE AND SPACES/ Studio, Lecture, Discussion

(Area) An introduction to the ideas and materials of three-dimensional form and an investigation of contemporary aspects of sculptural expression. Open to nonmajors.

Mr. Schiff

Offered every year

137 SCULPTURAL EXPRESSION/ Studio, Lecture, Discussion

(Area) An intermediate-level course leading to the development of personal direction and expression in three-dimensional form. Open to nonmajors. Prerequisite: 136 or permission of the instructor.

Mr. Schiff

140 FIBER DESIGN/ Studio, Lecture, Discussion

In an ordered sequence of projects, students explore the structural and surface possibilities of hand-constructed textiles by solving problems in three dimensions using paper, felt, sticks, wire, plastics, etc. These will be combined, constructed, or altered, using traditional textile fabricating processes. Slide lectures, field trips, and scavenger hunts supplement the projects. At the Worcester Craft Center.

Mr. Edlefsen

Offered every year

141 METAL DESIGN

An introductory course which explores metalsmithing technique and design through demonstrations, examples, slides, and assignments. Work outside the studio is required. Students provide their own materials. A text is suggested but not required. At the Worcester Craft Center.

Mr. McCreight

Offered every year

142 WOOD DESIGN

An introduction to basic wood characteristics and design concepts through projects that combine technical skills with sculptural construction. Several small-scale projects involving the use of tools and handmade joinery techniques allow students to explore their own design ideas and build a personal vocabulary of three-dimensional form. At the Worcester Craft Center.

Mr. March

Offered every year

143 CERAMIC DESIGN

An investigation of form using basic clayworking methods, including wheel-throwing and stoneware glazing. Work in addition to regularly scheduled class times is required. At the Worcester Craft Center.

Mr. Rexrode

Offered every year

150 FORM DESIGN-CLAY

(Area) An exploration of three-dimensional form, using clay as a plastic medium. Emphasis is upon developing an awareness of sculptural form and formal interrelationships in nature, art, and architecture. Open to nonmajors. Prerequisite: 101 or permission of the instructor.

Mr. Nigrosh

154 CERAMIC DESIGN PROJECTS

(Area) Intermediate and advanced work in clay design in relation to individual technical and stylistic development. Emphasis is on sculptural—including architectural—design rather than utilitarian function. Open to nonmajors. May be repeated for additional credit. Prerequisite: 150 and/or permission of the instructor.

Mr. Nigrosh

158 PRINTMAKING/ Studio, Lecture, Discussion

(Area) An introductory course in the technique and aesthetic of intaglio printmaking—etching, drypoint, aquatint, and engraving. Open to nonmajors. At intervals the course may include an introduction to lithographic printing processes. Prerequisite: introductory drawing course(s) and/or permission of the instructor.

Ms. Woods

Offered every year

162 PRINTMAKING PROJECTS/ Studio, Lecture, Discussion

(Area) Intermediate and advanced problem-solving in printmaking media—individual projects to be determined by student's interest and skills. May be repeated for credit and may satisfy Senior Studio course requirement. Open to nonmajors. Prerequisite: 158 and/or permission of the instructor.

Ms. Woods

166 SCREEN PRODUCTION-FILM/ Studio, Lecture, Discussion

(Area) An introductory workshop in Super-8mm film production. Students will be expected to complete a specific number of films of varied content. Open to nonmajors.

Staff

167 SCREEN PRODUCTION-VIDEO/ Studio, Lecture, Discussion (Area)

An introductory workshop in elementary video production techniques and processes. Open to nonmajors.

Mr. Simon

170 SCREEN PRODUCTION PROJECTS-FILM/ Studio, Lecture, Discussion

(Area) Intermediate and advanced individual and/or group work in film. Prerequisite: appropriate screen production courses and/or permission of the instructor.

Staff

171 SCREEN PRODUCTION PROJECTS-VIDEO/ Studio, Lecture, Discussion

(Area) Intermediate and advanced individual and/or group work in video. Prerequisite: appropriate screen production courses and permission of the instructor.

Mr. Simon, Staff

174 CONTEMPORARY DIRECTIONS/ Studio, Lecture, Discussion

(Area) An intermediate-level course. Experiential examination of current movements, directions, styles, and attitudes in art. Open to nonmajors. Prerequisite: appropriate introductory courses and permission of the instructor.

Mr. Souza

176 ENVIRONMENTAL ART/ Studio, Lecture, Discussion

(Area) A conceptual and studio workshop concerned with art and design of an environmental scale. Students investigate poetic, social, and cultural attitudes related to art and environment and, individually and collaboratively, produce works related to environment. Open to nonmajors.

Mr. Hachey

Offered irregularly

178 ARCHITECTURE AND SPACES/ Studio, Lecture, Discussion

(Area) Focuses on structures in the natural and built environment. Problems related to the synthesis of cultural, creative, and environmental factors as well as sculptural interpretations. Open to nonmajors.

Mr. Schiff

182 BASIC TECHNICAL THEATER

(Area) See listing under Theater Arts 120.

183 TECHNICAL THEATER II

(Area) See listing under Theater Arts 122.

184 DESIGN FOR PERFORMANCE

(Area) See listing under Theater Arts 123.

200 PHOTOGRAPHY PROJECTS/ Studio, Lecture, Discussion

(Area) An intermediate-level continuation of the study of the techniques and aesthetics of black and white photography. Students will have the opportunity to pursue individual photographic projects in the size and format of their choice. Materials (lab) fee. Open to nonmajors. Prerequisite: 120 and/or 121 and permission of the instructor.

Mr. Rosenstock, Mr. Slatkin

Offered every year

201 PHOTOGRAPHY PROJECTS/ Studio, Lecture, Discussion

(Area) See listing under 200.

Mr. Rosenstock, Mr. Slatkin

204 COLOR PHOTOGRAPHY/ Studio, Lecture, Discussion

(Area) An intermediate/advanced workshop for students who have demonstrated competence in black and white photography, concentrating on the theory, practice, and aesthetic of color photography. Students must provide their own cameras, tripods, film, and paper. Open to nonmajors. May be repeated for additional credit. Materials (lab) fee. Prerequisite: introductory photography courses and permission of the instructor.

Mr. Slatkin

208 TYPOGRAPHY/ Studio, Lecture, Discussion

(Major) Study of typographic art through studio exercises and applied problems which deal with the organizational and expressive natures of type. Prerequisite: 124, 125 and permission of the instructor.

Ms. Buie

Offered every year

218 DRAWING AND PAINTING PROJECTS/ Studio, Lecture, Discussion

(Major) A continuation of drawing and painting processes and concepts for the intermediate/advanced level student, with emphasis upon the search for individual direction and statement. May be repeated for credit and may satisfy Senior Studio course requirement. Prerequisite: appropriate area level drawing and painting courses and permission of the instructor.

Ms. Crocker, Mr. Souza,

Staff

Offered every year

224 DRAWING AND PAINTING-REALIST MODE/ Studio, Lecture, Discussion

(Major) Intermediate/advanced level course focusing on representational drawing and painting. Applicable for students interested in illustration. May be repeated for credit and may satisfy Senior Studio course requirement. Prerequisite: appropriate area level drawing and painting courses and permission of the instructor.

Ms. Crocker

Offered every year

230 SCULPTURE PROJECTS I/ Studio, Lecture, Discussion

(Major) Investigation of form and space in contemporary sculpture. Personal expression in three dimensions, focusing on individual perceptions and directions. May be repeated for credit and may satisfy Senior Studio course requirement. Prerequisite: appropriate three-dimensional design and introductory sculpture courses and permission of the instructor.

Mr. Schiff

234 STUDIO TOPICS/ Studio, Lecture, Discussion

(Major) An advanced course. Students from all studio disciplines will develop their work in response to thematic issues presented through readings and discussions. Themes will change with each semester offering Satisfies Senior Studio course requirement and may be repeated for credit.
Mr. Schiff Offered every year

SENIOR STUDIOS/ Studio, Discussion

For the advanced student who will work individually in developing a body of professionally-oriented work. Satisfies Senior Studio course requirement and may be repeated for credit. Prerequisite: appropriate intermediate and advanced courses and permission of instructor.
Staff

250 PHOTOGRAPHY STUDIO

254 GRAPHIC DESIGN STUDIO

258 DRAWING AND PAINTING STUDIO

262 ILLUSTRATION STUDIO

266 SCULPTURE STUDIO

270 PRINTMAKING STUDIO

278 SCREEN PRODUCTION STUDIO

289 SENIOR THESIS

(Non-credit) Required of all B.F.A. and Diploma Program students for graduation: a body of preprofessional work presented to the faculty with oral and/or written support.
Staff Offered every year

2995 SPECIAL PROJECT

Staff

2999 INTERNSHIP

Staff

MUSIC

PROGRAM FACULTY

Gerald R. Castonguay, Ph.D., *program director*: musicology
Wesley M. Fuller, M.Mus.: theory, composition, electronic and computer music
Relly Raffman, M.A.: theory, composition, jazz studies

PART-TIME FACULTY

Betsy Burleigh, M.Mus.: conducting
Lorraine DiSimone, M.Mus.: voice
Rita LaPlante, M.L.A.: piano
Jacques L. Linder, M.Mus.: piano, clarinet
Robert Manero, B.A.: violin, conducting

Jill Maurer-Davis, M.Mus.: flute
Allan Mueller, B.S.G.S.: jazz studies, jazz piano
Robert Paul Sullivan: guitar

ADJUNCT FACULTY

Hartmut Kaiser, Ph.D.

The music program offers a preprofessional course of study for the music major and courses and activities for the nonmajor. Courses are designed to teach students to listen to music intelligently, to develop a comprehension of music on its own terms, to master basic skills of music and apply them creatively, and to acquaint students with representative works from various periods of music history.

Courses are open to majors as well as nonmajors and assignments are designed to suit the different goals and backgrounds of the students in each category.

The Music Major includes the following courses:

- Theory: 121 [Prerequisite: 120, *Rudiments of Music* or placement examination]
- Theory: 122, 123, 124, 125
- Music history: 11, 12, 13, 14, 15, 16

The major who is concentrating in performance may, with permission of the faculty, waive the 11 and 122 requirements.

- Performing Groups: a minimum of four semesters in 107, 117, 127, 130, or 137
- Related areas: a full course in aesthetics, art, theater arts, or screen studies
- A minimum skills test, including sight-singing and dictation at a level of proficiency necessary for successfully pursuing the major, must be passed during the sophomore year. A keyboard proficiency test must be passed during the junior year.

Major Concentration Areas: The professionally oriented major may, by permission, concentrate in composition, theory, history, or performance.

For the performance concentration, private lessons are taken throughout the major program; other concentrations require individual tutorial work, usually undertaken only in the senior year. The major culminates in one of several types of final projects such as papers in historical research and theoretical research, compositions, and, in the case of the performance concentration, a senior recital preceded by appearances in student recitals. The performance concentration also requires a senior seminar dealing with stylistic analysis of the music to be performed on the senior recital. The program stresses the advantages of combining such professional musical development with the humanistic breadth offered by a strong liberal education.

Students planning to enter professions such as music therapy or concert management may incorporate music courses with appropriate courses from other disciplines in an individually-designed major. The requirements for such preprofessional programs are jointly determined by the student and an advisory committee made up of one music faculty member (who serves as chair), and two faculty members from other disciplines.

Although the music program does not offer specific courses in music education, music majors may prepare for public school teaching by taking courses in music curriculum and practice teaching through the Education Department.

Performing Organizations: Nonmajors and majors may audition for a va-

riety of organizations, including the Clark Concert Choir, the Worcester Consortium Orchestra, Instrumental Chamber Ensembles, and the Jazz Workshop.

Private Lessons for majors and nonmajors are offered with or without credit in several areas. See Music 18 course description.)

Placement Test: Prospective students considering a music major are urged to contact the program director to arrange for a placement test, which may be administered through Clark or through an authorized person at the student's current place of study. Although not required, this test enables the faculty to assess the student's present musical development and offer more informed advice. In some cases, it is possible to offer advanced theory placement as a result of the test.

Auditions: Students who wish to follow a performance concentration should arrange for an audition by contacting the program director.

INTRODUCTORY COURSES

10 INTRODUCTION TO MUSIC

Designed for the nonmajor, this course is a prerequisite for entrance into all music history courses. Its goal is to expand the concept of the musical experience and to develop discriminating listeners. Taught jointly by several faculty members, it also provides an introduction to the music program. The course includes an introduction to principles of rhythm, pitch, timbre (and their notations); the principles of structure; the aesthetics of music; specific forms including fugue, sonata form, variations, etc.; and selected historical styles.

Staff

Offered every semester

120 RUDIMENTS OF MUSIC

An introduction to the fundamentals of music; no previous experience is necessary. The course includes notation, ear-training, sight-singing, score reading, and elementary melodic and harmonic organization. The course satisfies the prerequisite for credit in Music 18, and entrance to Music 121.

Staff

Offered every year

MUSIC HISTORY

11 MEDIEVAL AND RENAISSANCE PERIODS/ Lecture, Discussion

Beginning with early Christian chant, this survey includes a study of the medieval song and motet and the growth of polyphonic secular and sacred music extending through the sixteenth century, culminating with the study of the Renaissance mass and madrigal. When possible, works are performed in class, and scores are used for the majority of works studied.

Mr. Castonguay

Offered every other year

12 BAROQUE PERIOD/ Lecture, Discussion

A survey of music from 1600 to 1750, the course deals with the origins and growth of vocal and instrumental genres (opera, oratorio, cantata, sonata, concerto, etc.) and the wide variety of formal types closing with the works of Bach and Handel. When possible, works are performed in class, and scores are used for works studied.

Mr. Castonguay

Offered every other year

13 CLASSICAL PERIOD/ Lecture, Discussion

This survey of music from the 1720s to the early decades of the nineteenth century focuses on the Italian, French, and Viennese styles. Special emphasis is given to the music of Haydn, Mozart, and Beethoven and the important musical genres of chamber music, symphony, and opera.

Mr. Castonguay

Offered every other year

14 ROMANTIC PERIOD/ Lecture, Discussion

Surveys the music of the major composers of the nineteenth century. The musical style and selected works of Schubert, Mendelssohn, Schumann, Chopin, Brahms, Tchaikovsky, Wagner, and others are studied and placed within the literary and artistic setting of nineteenth-century society.

Mr. Castonguay

Offered every other year

15 TWENTIETH-CENTURY MUSIC I/ Lecture, Discussion

A survey of early twentieth-century masterworks. Representative composers include: Debussy, Ravel, Prokofiev, Stravinsky, Bartok, Hindemith, Schoenberg, Berg, and Webern. Prerequisite: 10 or 120.

Mr. Raffman

Offered every other year

16 TWENTIETH-CENTURY MUSIC II/ Lecture, Tutorial

A study of important works composed primarily since 1950. Composers include Stravinsky, Cage, Carter, Boulez, Messiaen, Stockhausen, and others. Prerequisite: 10 or 120.

Mr. Fuller

Offered every other year

17 THE MUSIC OF JOHANNES BRAHMS/ Lecture, Seminar

The course considers Brahms as man and musician in the latter half of nineteenth-century Vienna, and surveys his chamber and orchestral music, lieder, and keyboard works. Whenever possible, works will be performed live in class.

Mr. Castonguay

Offered every other year

19 WORLD MUSIC

Students study and listen to the differences and likenesses in music from a wide variety of cultures and consider the ways in which music, ranging from classical art music to music for work and communal celebration, functions within cultures. Musics of India, Africa, Japan, China, and Iran are some of the recurring areas. Guest performers of ethnic music are part of the course.

Mr. Fuller

Offered every other year

20 CHAMBER MUSIC

A survey of selected works of the major composers in the field of chamber music from Haydn to Stravinsky. Trips to concerts in the surrounding area are made whenever feasible.

Mr. Castonguay

Offered irregularly

113 J.S. BACH AND HIS MUSIC/ Lecture, Seminar

Investigates the social, historic, and cultural setting of Bach's era, and encompasses study of his music, including the early cantatas and organ works, the instrumental music from his Cothen period, and, finally, the mature cantatas of his Leipzig years. When possible, works are performed in class and scores are provided for the majority of works studied.

Mr. Castonguay

Offered every other year

114 BEETHOVEN: THE MAN AND HIS MUSIC/ Lecture, Seminar
Explores the social and historical background of Beethoven's Vienna and centers on the study of selected works from the important genres (symphony, chamber music, and sonata) throughout Beethoven's career.
Mr. Castonguay
Offered every other year

118 SENIOR TUTORIAL IN MUSIC HISTORY
For majors only. Full course. Prerequisite: permission of instructor.
Staff
Offered every semester

With permission of the program director, the following courses offered by other departments may be taken for music history, criticism, and theory credit.

German 168 MUSIC IN GERMAN LITERATURE AND THOUGHT
See listing under Foreign Languages and Literatures.

German 197 THE FAUST THEME IN LITERATURE AND MUSIC
See listing under Foreign Languages and Literatures.

MUSIC THEORY

121 PRIMARY THEORY/ Lecture, Tutorial
A study of the structure of tonal music, this two-semester course includes analytical and compositional problems in homophonic, monodic, and polyphonic textures, basic orchestration, ear-training, sight-singing, and conducting. Prerequisite: 120 or entrance examination (given at first class meeting). Divisible course.
Mr. Raffman
Offered every year

122 THEORY: MODAL COUNTERPOINT/ Lecture, Tutorial
Contrapuntal styles in two, three, and four-part textures of major composers of the fifteenth and sixteenth centuries are analyzed and used as a foundation for compositional assignments. Twentieth-century modal polyphony is also studied. Prerequisite: 121.
Mr. Fuller
Offered every other year

123 THEORY: EIGHTEENTH-CENTURY COUNTERPOINT/ Lecture, Tutorial
Compositional and analytical problems in the eighteenth-century contrapuntal idiom; two- and three-part inventions, canon, and fugue. The thoroughbass practice of the seventeenth and eighteenth centuries is explored. Final project: the composition of a three- or four-voice fugue. Prerequisite: 121.
Mr. Raffman
Offered every other year

124 THEORY: NINETEENTH-CENTURY PRACTICE/ Lecture, Tutorial
Deals with problems in analysis, composition, and orchestration in the chromatic style of the nineteenth century. Works of Beethoven, Chopin, Schumann, Wagner, and Brahms are analyzed and used as compositional models. The harmonic language of impressionism, with its emphasis on scalar control, also is examined. Prerequisite: 121.
Mr. Raffman
Offered every other year

125 THEORY: TWENTIETH-CENTURY PRACTICE

Compositional techniques of major twentieth-century composers are analyzed and used as a basis for compositional assignments. Prerequisite: 124 or permission of instructor.

Mr. Fuller

Offered every other year

128 SENIOR TUTORIAL IN COMPOSITION

For majors only. Full course. Prerequisite: permission of instructor. Staff

131 JAZZ THEORY/ Lecture, Tutorial

Includes a study of the rhythmic/harmonic/melodic structures of jazz, the scalar basis of improvisation, and voicing practice as it pertains to scoring for small and large ensembles. Prerequisite: 120 or passing of placement examination in rudiments.

Mr. Raffman

Offered every other year

133 TUTORIAL IN JAZZ COMPOSITION

The student writes original scores for performance by workshop ensemble. Prerequisite: 131 and permission of instructor.

Mr. Raffman

Offered every year

138 SENIOR TUTORIAL IN THEORY

For majors only. Full course. Prerequisite: permission of instructor. Staff

SPECIAL OFFERINGS

90 DIRECTED STUDIES IN ELECTRONIC MUSIC

Advanced work in any of the main areas of electronic music: composition, hardware or software design, psychoacoustics. Work may center on either analog (synthesizer) or computer music. Resources of the Tri-College Electronic Music Program are made available to students. Prerequisite: 140 or permission of instructor.

Mr. Fuller

Offered every year

135 THE COMPOSER AND SOCIETY/ Seminar

Studies the effects that institutions, whether governmental, religious, economic, or sociomusical, have upon the artistic and personal life of the composer. Projects focus on periods and composers decided upon by the students and the instructor. Nonmajors and majors welcome.

Mr. Castonguay

Offered every other year

140 INTRODUCTION TO ELECTRONIC MUSIC

Explores electronic music as a natural, historical, and artistic result of twentieth-century musical and technological achievements. A group of important musical works is studied. Directed work in the analog synthesizer studios is a major component. Team-taught by two composers and a physicist.

Mr. Fuller, and faculty
members of the Tri-College Group
for Electronic Music

141 SOUND INVENTION WORKSHOP/ELECTRONIC

A studio workshop that instructs students in the use of the Clark Electronic Music Studio's sound-making and processing equipment. Members of the workshop acquire basic skills of synthesizer use, taping, and mixing, and develop a personalized project, such as a soundtrack for a film or videotape, a tape music composition, music for a theatrical event, or sounds for visual installations. Prerequisite: permission of instructor.

Mr. Fuller

Offered irregularly

PERFORMANCE COURSES

18 PRIVATE INSTRUCTION IN INSTRUMENTS AND VOICE

Areas offered include: piano (Ms. LaPlante, Mr. Linder), jazz piano (Mr. Mueller), voice (Ms. DiSimone), clarinet (Mr. Linder), flute (Ms. Maurer-Davis), classical guitar (Mr. Sullivan), violin (Mr. Manero), and conducting (Mr. Manero, Ms. Burleigh). Lessons may be taken for credit or noncredit. Majors accepted as concentrators in performance may receive one credit per semester during their junior and senior years. Maximum number of credits: nonmajors, three; majors not in performance concentration, four; majors in performance concentration, six. Lesson fee is not included in tuition.

Staff

Offered every semester

130 JAZZ WORKSHOP/ Rehearsal, Performance

Includes ensemble performance practice with weekly rehearsals through the year. An audition is required. Credit is possible for those concurrently enrolled in, or having previously passed, 131. Maximum transcript credit allowed is one full course; offered as a half course.

Mr. Raffman and Mr. Mueller

Offered every semester

134 CHORAL MUSIC AND CONDUCTING/ Lecture, Tutorial

Styles of choral music from different periods are studied with the aid of scores and recordings. Students learn basic choral conducting techniques. Prerequisite: 121 or permission of instructor.

Staff

Not offered on a regular basis

148 SENIOR TUTORIAL FOR PERFORMANCE CONCENTRATION

Majors concentrating in performance analyze historically and theoretically the music they will perform on their senior recital. A term paper is required.

Staff

Offered every semester

The following musical activities are open to all students, graduate and undergraduate alike. Auditions are held during the first week of Semester 1. Although no credit is awarded, the transcript of any undergraduate who completes the assigned performance requirements will include a listing of the particular activity for which he or she was registered.

107 CHAMBER MUSIC ENSEMBLES/ Rehearsal, Performance

The number of small ensembles is determined by the performing talent in a given year. Admission is by audition.

Staff

Offered every semester

117 CLARK CHAMBER CHORUS/ Rehearsal, Performance

This is a small, specialized singing group chosen by the conductor from the larger Clark Concert Choir. Admission is by audition.

Ms. Burleigh

Offered every semester

127 CLARK CONCERT CHOIR/ Rehearsal, Performance

A chorus of 40 to 50 voices, the choir presents two major concerts each year on the Clark campus as well as off-campus appearances.

Ms. Burleigh

Offered every semester

137 WORCESTER CONSORTIUM ORCHESTRA/ Rehearsal, Performance

Made up of students from various consortium institutions and instrumentalists from the community, the orchestra presents two major concerts each year. Admission is by audition.

Mr. Manero

Offered every semester

SCREEN STUDIES

PROGRAM FACULTY

Philip Rosen, Ph.D., *program director*: screen theory and criticism, screen history

ADJUNCT FACULTY

Marcia Butzel, Ph.D.

Marvin A. D'Lugo, Ph.D.

James P. Elliot, Ph.D.

Walter Schatzberg, Ph.D.

Michael K. Spingler, Ph.D.

Andrea Walsh, Ph.D.

UNDERGRADUATE PROGRAM

The Screen Studies Program deals with arts and artifacts of the moving two-dimensional image, usually combined with sound; it is concerned, in other words, with the study of film, broadcast television, and other forms of video. Courses—in screen history, theory, and criticism—all include viewing, discussion, and analysis of film and/or video.

The program stresses the importance of a liberal arts background, for the screen arts touch upon and are affected by all sectors of contemporary culture and society. They relate directly to sociology as well as aesthetics; politics and international development as well as literature and drama; psychology and economics as well as the other visual arts and popular culture. Students take screen studies courses for many different reasons: to acquire knowledge that relates to their interests in other disciplines, to gain a better understanding of the roles film and television play in their everyday lives, or to understand the importance of the screen media as cultural and artistic forms.

Students planning careers in the screen arts or related areas usually major in screen studies. In addition, the major is of special benefit, not only for those planning graduate study or a career in the communications fields, but also for those seeking a liberal arts education that speaks directly to questions of contemporary life, culture, and the arts.

Students interested in film and video production may take the Studio Art Program's production courses and/or gain production experience through professional internships.

Requirements for the screen studies major:

1. A minimum of 10 courses in screen, including
 - a. 101, *Introduction to Screen Studies* (to be taken as early as possible)
 - b. At least three screen history courses, including a minimum of two of the following: 120, *History of American Narrative Film*; 121, *Survey of International Film Movements*; 122, *History of Broadcasting and Television*.
 - c. At least one screen theory course (usually 231, *Film Theory* or 232, *Television Theory and Criticism*)
 - d. An advanced topics course resulting in a major term paper. (Usually, 290, *Advanced Problems in Screen Studies* or 2995, *Special Project*, when the latter results in original research or intensive critical analysis or intensive theoretical reading and analysis.)
 - e. One practicum course, normally Studio Art 166, *Screen Production-Film* or Studio Art 167, *Screen Production-Video*. No more than two practicum courses may count toward the minimum of ten screen courses required for the major. (If students do take additional practicum courses, they will count toward graduation, but not toward the major.)
2. Demonstrated competence in an outside area pertinent to the student's particular emphasis in screen studies. The student demonstrates competence in an outside area by accomplishing one of the following:
 - a. Completing requirements for a double major, or,
 - b. Completing five courses that together form a mutually coherent group—disciplinary or interdisciplinary—related to screen studies. At least three of the courses will be chosen on the basis of consultation with and approval by the major adviser.

Note: The courses listed below are designated as lecture, discussion, and/or seminar. However, all screen studies courses include viewing of films and/or television programming. Students may be required to attend separate screening periods in addition to lecture, discussion, and/or seminar sessions.

101 INTRODUCTION TO SCREEN STUDIES/ Lecture, Discussion

Introduction to screen arts, with emphasis on critical thought and analysis. Special attention is paid to styles and forms used to organize image and sounds in individual works, and to critical analysis and theoretical argumentation with regard to the screen arts. Fulfills prerequisites for advanced screen studies courses.

Mr. Rosen, Staff

Offered every semester

120 HISTORY OF AMERICAN NARRATIVE FILM/ Lecture, Discussion

Intensive overview of the national cinema which has been strongest socially and economically, and which is also often regarded as the most influential in an aesthetic sense. Consideration of "Hollywood" filmmaking from social, economic, and aesthetic viewpoints.

Mr. Rosen

Offered every other year

121 SURVEY OF INTERNATIONAL FILM MOVEMENTS/ Lecture, Discussion

Broad survey designed to acquaint students with major foreign movements in cinema history. Includes readings on and screenings of examples selected from Italian silent epics, early Scandinavian cinema, German Ex-

pressionist and Weimar cinema, Soviet montage school, Soviet socialist realism, British documentary school, Nazi cinema, Italian neo-realism, Japanese classical cinema, French New Wave, post-New Wave political cinema, Third World cinema, various Eastern European schools.

Mr. Rosen

Offered every other year

122 HISTORY OF BROADCASTING AND TELEVISION/ Lecture, Discussion

Overview of the history of the broadcast media, from the invention of radio through the development of the television networks and cable transmission. attention is paid to typical programming characteristics, social implications of broadcast materials, and the economic-industrial infrastructure of broadcasting.

Staff

Offered every year

125 HISTORY OF GERMAN CINEMA

See listing under German 125.

135 HISPANIC CINEMA AND SOCIETY

See listing under Spanish 135.

150 MODERN GERMAN CINEMA

See listing under German 150.

155 STUDIES IN ITALIAN NEOREALISM

See listing under Comparative Literature 155.

160 FRENCH FILM

See listing under French 160.

231 FILM THEORY/ Lecture, seminar

Examines major works of film theory, both classical and contemporary. Readings are drawn from the work of Eisenstein, Bazin, Munsterburg, Arnheim, Burch, Benjamin, Adorno, Kracauer, Metz, Heath, Mulvey, Wollen, and others. Prerequisite: 101 or permission.

Mr. Rosen

Offered every other year

251 SOCIOLOGY OF MASS COMMUNICATIONS

See listing under Sociology 251.

290 ADVANCED PROBLEMS IN SCREEN STUDIES/ Seminar

Advanced studies of specific issues and approaches in the study of the screen arts. Topics vary each time the course is offered. Sample topics: Brechtian cinema; Eisenstein as theoretician, film-maker, and historical figure; narrativizing the image in film and television; the idea of a national cinema and non-Western film-making. Students produce a major term paper. Prerequisite: 101 or permission.

Staff

Offered every other year

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2999 INTERNSHIP

Staff

In addition to the above, one or more, but not necessarily all, of the following will be offered during 1984-85 and 1985-86.

104 SCREEN EXPERIMENT/ Lecture, Discussion

Surveys avant-garde and experimental film and video, with some attention to relations between the screen arts and other artistic areas. Course coverage includes abstract film, dada and surrealist cinema, city symphonies, Soviet montage experiments, New American Cinema, structural film, etc. Prerequisite: 101 or permission.

Mr. Rosen

Offered irregularly

201 ASPECTS OF SCREEN HISTORY/ Lecture, Discussion

Explores different facets of world cinema and television history. Content varies. Sample topics: Japanese cinema 1930-60; the transition to sound cinema; Soviet cinema; etc. Prerequisite: 101 or permission.

Staff

Offered irregularly

221 SCREEN AUTEURS/ Seminar

Film criticism seminar covering the work of a single individual or individuals, normally, directors. Content varies. Prerequisite: 101 or permission.

Staff

Offered irregularly

232 TELEVISION THEORY AND CRITICISM/ Seminar

Covers television analysis, which includes reading some important works of television theory and aesthetics, such as writings of Zettl, Adorno, Williams, and others. Prerequisite: 101 or permission.

Staff

Offered irregularly

THEATER ARTS HISTORY AND CRITICISM

PROGRAM FACULTY

Neil R. Schroeder, Ph.D., *program director*: theater history and criticism, modern drama, Ibsen, speech

Raymond J. Munro, M.A.H.: directing, acting theory

ADJUNCT FACULTY

James F. Beard Jr., Ph.D.

Kenneth Hughes, Ph.D.

Hartmut Kaiser, Ph.D.

Michael K. Spingler, Ph.D.

Virginia Vaughan, Ph.D.

UNDERGRADUATE PROGRAM

Courses in theater arts—open to majors and nonmajors—are intended to provide theater students with a sound liberal arts education and to prepare them for graduate school or professional theater. For information about studio courses and productions, see listing under Theater Performance/Production.

The theater arts history and criticism major consists of a minimum of nine full courses as follows:

1) Required:

10, *How Does a Play Work?*

one course in acting (usually T.A. 12)

one course in technical theater or design (usually T.A. 120)

one course in aesthetics (usually Aesthetics 149)

151.1, *Theater in Western Civilization I*

151.2, *Theater in Western Civilization II*

2) At least three additional courses in theater history, dramatic literature, criticism, and aesthetics.

In addition, a mastery of at least one foreign language is strongly recommended.

COURSES

10 HOW DOES A PLAY WORK? CRITICAL ANALYSIS AND WRITING/ Lecture, Discussion

Explores a small group of plays representing several styles, modes, and eras of Western drama, with special emphasis on formal analysis—study of the form and structure of each play. By means of class discussion, the oral interpretation of scenes from the plays, and the reading of critiques, which illustrate various critical approaches to the drama, the student will be encouraged to arrive at a personal evaluation of the plays. This course satisfies the *verbal expression* skill in the Program or Liberal Studies. No prerequisite. Several short papers.

Mr. Schroeder

Offered every year

151.1 THEATER IN WESTERN CIVILIZATION I/ Lecture, Discussion

A survey of theater and drama from ancient Greece to the Renaissance. The course considers the form and substance of theatrical presentations and the study of several representative plays from each important era and national theater. No prerequisite.

Mr. Schroeder

Offered every other year

151.2 THEATER IN WESTERN CIVILIZATION II/ Lecture, Discussion

A survey of theater and drama from the seventeenth century to the present, this is a continuation of 151.1. No prerequisite.

Mr. Schroeder

Offered every other year

154.1 MODERN DRAMA I/ Lecture, Discussion

A survey of Western drama and theater from Ibsen to World War II. The course traces the development of modern realistic drama and early experimental reactions to realism. No prerequisite. At least three papers or exams.

Mr. Schroeder

Offered every year

154.2 MODERN DRAMA II/ Lecture, Discussion

A survey of Western drama and theater from World War II to the present, which examines several of the major postwar movements and the radical dramatic forms they have produced. No prerequisite. At least three papers or exams.

Mr. Schroeder

Offered every year

155 ENGLISH DRAMA
See listing under English.

One or more, but not necessarily all, of the following may also be offered during 1984-85 and 1985-86.

164 THE AMERICAN MUSICAL THEATER/ Lecture, Discussion

While some attention is paid to the history of the musical theater in the United States, primary emphasis in this course is on the study and analysis of several important contemporary musicals, and on the form and structure, of books, lyrics, and music. No prerequisite. At least three papers or exams or creative projects.

Mr. Schroeder

185 TENNESSEE WILLIAMS/ Lecture, Discussion

An intensive study of the playwright's work concentrating on his development as an artist. Students evaluate his contribution to drama and literature through reading and analysis of his works. No prerequisite, but some experience in drama and literature is expected.

Mr. Schroeder

230 ELEMENTS OF DRAMA

See listing under Comparative Literature 230.

237 LANGUAGES OF THEATER

See listing under Comparative Literature 237.

286 IBSEN/ Seminar

An intensive study of the playwright's life and major works. Consideration is given to his development as an artist. Independent research and study is emphasized. Prerequisite: permission of instructor.

Mr. Schroeder

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2999 INTERNSHIP

Staff

With permission of the program director, the following courses offered by other departments may be taken for theater history and criticism credit:

English 112 INTRODUCTION TO SHAKESPEARE

See listing under English.

English 212 SHAKESPEARE

See listing under English.

English 268 EUGENE O'NEILL/ Seminar

See listing under English.

French 255 THE MODERN FRENCH THEATER

See listing under Foreign Languages and Literatures.

348 Visual and Performing Arts

German 127 DRAMATIC EXPRESSION IN GERMAN

See listing under Foreign Languages and Literatures.

German 138 MODERN GERMAN DRAMA

See listing under Foreign Languages and Literatures.

German 166 GERMAN DRAMA FROM LESSING TO EXPRESSIONISM

See listing under Foreign Languages and Literatures.

THEATER ARTS PERFORMANCE AND PRODUCTION

PROGRAM FACULTY

Raymond J. Munro, M.A.H., *program director*: directing, acting theory

Lauren J. Kurki, B.F.A.: scene and costume design, technical theater

PART-TIME FACULTY

Ann Janowsky, M.F.A.

ADJUNCT FACULTY

Michael K. Spingler, Ph.D.

Catherine Quick Spingler, M.A.

UNDERGRADUATE PROGRAM

Courses in theater arts—open to majors and nonmajors—provide students with a sound liberal education and prepare them for graduate school or professional theater. Each year, the program presents professionally-directed productions of classic and contemporary theater; although any Clark student may audition, students who take theater arts courses are required, as part of their course work, to participate in these productions. There are also opportunities for students to act and direct in classes, workshops, and student-sponsored productions, and to audition for Clark Center for Contemporary Performance productions.

The Clark Center for Contemporary Performance is a scholarly community of directors, composers, playwrights, choreographers, film/video makers, and critics devoted to the creation, development, and publication of contemporary works of art as well as to theoretical reflection about the works and their performance. The range of such work includes new scripts, original compositions or scores, translations, transformation of poetry into performance pieces, and explorations of the intersection of music, dance and video in the performance of existing works.

The center is designed to enhance the academic work of the University by organizing and focusing advanced learning through seminars and directed study in music, theater, film, design, literature, and aesthetics. Advanced students are encouraged to develop creative and theoretical projects within the center, so that they may take full advantage of the critical evaluation and supervision available, and enrich their educational experience through contact with faculty, other students, and outside artists and performing groups.

The Theater Arts Major in Performance and Production:

1) Required:

- 12 *The Creative Actor*
- 13 *Actor as Thinker*
- 120 *Basic Technical Theater*
- 151.1 *Theater in Western Civilization I*
- 151.2 *Theater in Western Civilization II*

2) At least four courses from the following:

- 11 *Voice and Diction*
- 16 *Movement I*
- 17 *Advanced Movement for Theater*
- 19 *Directing Seminar*
- 113 *Studio (may be repeated)*
- 122 *Basic Technical Theater II*
- 123 *Design for the Theater (may be repeated)*
- 165 *French Play Production*

Note: 11, 16, and 113 are required for actors and directors. In addition, it is suggested that students who are seriously interested in acting or directing attempt to master at least one foreign language.

COURSES

11 VOICE AND DICTION/ Studio, Tutorial

An intensified phonetic approach to articulation and voice production with some emphasis on speech for the stage and for public occasions. Each student is required to master the International Phonetic Alphabet to the point where it is an effective tool for ear training and articulation. Several laboratory sessions will be provided for the student to record and listen to his/her voice and for individual coaching by the instructor. No prerequisite.

Mr. Schroeder

Offered irregularly

12 THE CREATIVE ACTOR/ Studio

Through a series of workshops, the student becomes familiar with the basic tools necessary to the art of acting. The approach is based on the techniques of Stanislavski, Viola Spolin, Joseph Chaikin, Robert Cohen, and on original exercises, including an introduction to basic voice and movement for the actor. No prerequisite. Limited to 25.

Mr. Munro, Ms. Janowsky

Offered every semester

13 ACTOR AS THINKER/ Studio, Lecture, Discussion

A conceptual approach to acting theory and its application. Through a series of lectures and exercises, the student develops a greater understanding of script analysis, characterization, style, and the relationship of the actor to his audience. A basic course for all students who intend to continue in acting and directing, and a prerequisite for the Studio and Directing Seminar courses. Prerequisite: 12. Limited to 15.

Mr. Munro

Offered every semester

16 STAGE MOVEMENT I/ Studio

Students study the basic principles of stage movement techniques and extension of the emotional range of the body. Prerequisite: permission.

Staff

Offered every year

17 ADVANCED MOVEMENT FOR THE THEATER/ Studio

Students receive further development of stage movement technique. They do work in rhythm and dynamics through involvement in choreographed selections. Styles of movement are studied. Prerequisite: permission.

Staff
Offered every year

19 DIRECTING SEMINAR

Introduces the principles of directing for the stage through theory, practical application, and discussion. Students study problems of interpretation and concept; the role of the director as creative and interpretive artist; relationship to designer, stage manager, and actors. Additional lab time is required. Prerequisites: 13 and permission of instructor.

Mr. Munro
Offered every year

112 PUBLIC SPEAKING/ Studio

Students are required to make as many speeches as time permits, so that they may master the fundamentals of public speaking, including the more common situations: presentation of information and persuasive speaking. No prerequisite.

Mr. Schroeder
Offered irregularly

113 STUDIO

A scene study course applying methods, theories, and approaches discussed in Actor as Thinker. Students are required to present several scenes of different periods and styles for discussion, critical written review, and further development by classmates and director. The content varies each time the course is taught and it may be repeated for credit. Lab and crew hours are required. Prerequisite: 13.

Mr. Munro, Ms. Janowsky
Offered every year

120 BASIC TECHNICAL THEATER/ Studio, Lecture

Introduction to theatrical production. Techniques and organization involved in providing the stage with scenery, lights, and properties. Drafting of these elements is introduced, as well as scaled ground plans and other stage data. Makeup, lighting, and set construction in applied lab/crew requirements.

Ms. Kurki
Offered every year

122 TECHNICAL THEATER II/ Studio, Lecture

Continuation of 120. Beginning elements of design and styles of production. Basics of perspective and methods of pictorial representation. Continued focus on specific elements of scenery, lighting, and properties in relation to theater facilities, materials, and equipment. Lab/crew assignments. Prerequisite: 120 or permission of instructor.

Ms. Kurki
Offered every year

123 DESIGN FOR PERFORMANCE/ Studio, Tutorial

Theory of design/function of stage designer relating to production and to director. Historical research in styles of ornament and production. Student may register with emphasis on scenery, lighting, properties or costume/makeup design. Drafting required. Painting and rendering introduced. Lab/crew assignments. May be repeated for credit. Prerequisite: 120 and 122 or permission.

Ms. Kurki
Offered every year

165 FRENCH PLAY PRODUCTION

See listing under Foreign Language and Literatures.

2991 DIRECTED READINGS

Staff

2995 SPECIAL PROJECTS

Staff

2999 INTERNSHIP

Staff

Women's Studies

PROGRAM FACULTY

Cynthia H. Enloe, Ph.D., *coordinator*: women and politics, militarization, Asian and Black politics

Rachel Joffe Falmagne, Ph.D.: logical cognition, logico-semantic development

Susan E. Hanson, Ph.D.: urban-social geography, transportation

Serena S. Hilsinger, Ph.D.: modernist literature, women writers

Christina Hoff-Somers, Ph.D.: history of ethics, history of philosophy, contemporary moral theory, philosophy of literature

Ruth Harriet Jacobs, Ph.D.: gender, theory, field methods, gerontology

Sharon P. Krefetz, Ph.D.: urban politics, suburban politics, women and politics

Elizabeth A. Stanko, Ph.D.: victimization of women, police-prosecutorial discretion, qualitative methodology

Barbara P. Thomas, Ph.D.: community organization, women and public policy, rural development

Roberta Tovey, Ph.D.: Restoration and eighteenth-century literature, novel

Virginia Vaughan, Ph.D.: Shakespeare, Renaissance drama, Chaucer, medieval literature

Andrea S. Walsh, Ph.D.: aging, women's studies, popular culture/mass communications

Kristin Waters, Ph.D.: ethics, social and political philosophy, history of philosophy, women's studies

Walter W. Wright, Ph.D.: nineteenth-century philosophy, ethics, philosophy of religion, German idealism

PROGRAM

Although Clark does not offer a major in women's studies, it recognizes the appropriateness of offering courses that reflect the concerns of women from the perspective of different disciplines. Each year, courses that speak to the social roles, biological theories, and cultural formulations of women's and men's positions in society are offered in a number of departments. Interested students are encouraged to take a concentration in women's studies to supplement their traditional disciplinary based majors. This will appear on their graduation transcript. The following sequence of courses comprises a concentration: *Introduction to Women's Studies*, one advanced course, one seminar, and an internship in women's studies.

Students also may self-design a major to include issues related to women's studies.

The following is a partial list of Clark's women's studies course offerings; more information can be obtained from participating faculty.

COURSES

INTRODUCTION TO WOMEN'S STUDIES

Refer to course description under Sociology 10.

Ms. Walsh

COMPARATIVE POLITICS OF WOMEN

Refer to course description under Government 208.

Ms. Enloe

FICTION BY WOMEN WRITERS

Refer to course description under English 115.

Ms. Hilsinger

MODERN FICTION BY WOMEN WRITERS

Refer to course description under English 116.

Ms. Hilsinger

WOMEN AND PHILOSOPHY

Refer to course description under Philosophy 139.

Ms. Waters

ADVANCED TOPICS IN WOMEN AND PHILOSOPHY

Refer to course description under Philosophy 297.

Ms. Waters

WOMEN OF THE ENGLISH RENAISSANCE

Refer to course description under English.

Ms. Vaughan

WOMEN AND LABOR/ Seminar

Refer to course description under Government 262.

Ms. Enloe

WOMEN AND POLITICS

Refer to course description under Government 175.

Ms. Krefetz

SOCIOLOGY OF WOMEN'S WORK

Refer to course description under Sociology 209.

Ms. Jacobs

WOMEN AND CRIME

Refer to course description under Sociology 210.

Ms. Stanko

SOCIOLOGY OF SEX ROLES

Refer to course description under Sociology 225.

Ms. Jacobs

SEMINAR: VIRGINIA WOOLF

Refer to course description under English 226.

Ms. Hilsinger

FEMINIST THEORY/ Seminar

Refer to course descriptions under English and Philosophy.

Ms. Hilsinger, Ms. Waters

IMAGES OF WOMEN IN FILM

Refer to course description under Sociology 249.

Ms. Stanko

THE FAMILY

Refer to course description under Sociology 255.

Staff

WOMEN AND MILITARIZATION

Refer to course description under Government 261.

Ms. Enloe

JANE AUSTEN

Refer to course description under English 228.

Ms. Tovey

WOMEN IN SOCIETY

Refer to course description under Psychology 236.

Ms. Joffe Falmagne

Faculty

Members of the faculty and officers (appointed for the 1984-85 academic year as of July 1, 1984) are listed alphabetically with their titles, degrees, and years at Clark.

PRESIDENT

RICHARD P. TRAINA, Ph.D., President of the University. B.S., University of Santa Clara, 1958; M.A., University of California, Berkeley, 1960; Ph.D., 1960. (1984-)

EMERITI

KARL O.E. ANDERSON, Ph.D., Professor of English, Emeritus. A.B., Harvard University, 1927; A.M., 1928; Ph.D., 1942. (1945-76)

KARL J.R. ARNDT, Ph.D., Professor of German, Emeritus. (1950-1974)

RAYMOND E. BARBERA, Ph.D., Professor of Romance Languages, Emeritus. A.B., Brooklyn College, 1947; A.M., University of Arizona, 1948; Doctor en Letras, Universidad Nacional de Mexico, 1949; Ph.D., University of Wisconsin, 1958. (1953-)

TILTON M. BARRON, B.L.S., Librarian, Emeritus. A.B., Colorado College, 1937; B.L.S., Columbia University School of Library Science, 1940. (1954-1978)

ROBERT F. CAMPBELL, Ph.D., Professor of American History, Emeritus. A.B., Yale University, 1939; A.M., Columbia University, 1940; Ph.D., 1947. (1946-1957; 1960-)

WILLIAM H. CARTER JR., Ph.D., Professor of English, Emeritus. A.B., Middlebury College, 1936; A.M., Harvard University, 1938; Ph.D., 1951. (1949-1984)

PAUL S. CLARKSON, J.D., Curator, Emeritus. (1969-1979)

LYDIA P. COOK, B.S., Registrar, Emeritus. (1932-1966)

MORRIS H. COHEN, Ph.D., Professor of Government, Emeritus. A.B., University of Chicago, 1939; Ph.D., 1950. (1947-1984)

JESSIE C. CUNNINGHAM, Ph.D., Associate Professor of English, Emeritus. (1957-1975)

TAMARA DEMBO, Ph.D., Professor of Psychology, Emeritus. (1953-1972)

GEORGE E. HARGEST, M.B.A., Associate Professor of Economics, Emeritus. (1942-1971)

SHERMAN S. HAYDEN, Ph.D., Professor of International Relations, Emeritus. (1946-1973)

FREDERICK W. KILLIAN, LL.B., Associate Professor of Sociology, Emeritus. (1947-1970)

J. FANNIN KING, M.A., Associate Professor of Romance Languages, Emeritus. Adviser to International Students. A.B., Pomona College, 1936; A.M., Harvard University, 1937. (1946-1985)

DWIGHT E. LEE, Ph.D., L.H.D., Jacob and Frances Hiatt Professor of European History, Dean of the Graduate School, Emeritus. (1927-1967)

RAYMOND E. MURPHY, Ph.D., Professor of Economic Geography, Emeritus. (1946-1968)

RUDOLPH F. NUNNEMACHER, Ph.D., Professor of Zoology, Emeritus. B.S., Kenyon College, 1934; A.M., Harvard University, 1935; Ph.D., 1938. (1939-1983)

J. RICHARD REID, Ph.D., Professor of Romance Languages, Emeritus. (1944-1976)

PERCY M. ROOPE, Ph.D., Professor of Physics, Emeritus. (1921-1962)

THEODORE H. VON LAUE, Ph.D., Jacob and Frances Hiatt Professor of History, Emeritus. B.A., Princeton University, 1939; Ph.D., 1944. (1970-1983)

FACULTY AND OFFICERS OF INSTRUCTION

- VERNON AHMADJIAN, Ph.D., Professor of Botany. A.B., Clark University, 1952; A.M., 1956; Ph.D., Harvard University, 1960. (1959-1968; 1969-)
- MARILYN S. ALBERT, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Rochester University, 1963; M.A., McGill University, 1964; Ph.D., 1979. (1978-)
- MARTIN ALBERT, M.D., Ph.D., Associate Professor of Psychology (Affiliate). M.D., Tufts University Medical School, 1963; Ph.D., University of Paris, 1971. (1980-)
- MICHAEL P. ALEXANDER, Ph.D., Assistant Professor of Psychology (Affiliate). B.A., Rice University, 1968; M.D., Stanford University, 1972. (1977-)
- HARRY C. ALLEN JR., Ph.D., Professor of Chemistry, Department of Chemistry Chair. B.S., Northeastern University, 1948; Sc.M., Brown University, 1949; Ph.D., University of Washington, 1951. (1969-)
- DAVID ALTIG, Ph.D., Visiting Assistant Professor of Economics. B.B.A., University of Iowa, 1980; M.A., Brown University, 1982; A.B.D. (1984-)
- ROY S. ANDERSEN, Ph.D., Professor of Physics. A.B., Clark University, 1943; A.M., Dartmouth College, 1948; Ph.D., Duke University, 1951. (1960-)
- ALBERT A. ANDERSON, Ph.D., Associate Professor of Philosophy, Department of Visual and Performing Arts Chair; Adjunct Professor of Comparative Literature. B.A., Morningside College, 1960; M.A., Boston University, 1963; Ph.D., 1971. (1973-)
- PATRICIA M. ANDERSON, Ph.D., Assistant Professor of Marketing. B.A., Connecticut College, 1953; M.A., University of Delaware, 1968; Ph.D., University of Massachusetts, 1977. (1980-)
- MORTIMER H. APPLEY, Ph.D., President, Emeritus; Professor of Psychology. B.S., The City College, New York, 1942; M.A., University of Denver, 1946; Ph.D., University of Michigan, 1950; D.Sc., York University, 1975; L.H.D., Northeastern University 1983; Litt. D., American International College, 1984; LL.D. Clark University, 1984. (1974-)
- DOUGLAS M. ASTOLFI, Ph.D., Dean of the College and Dean of the College of Professional and Continuing Education (COPACE). A.B., Tufts University, 1965; M.A., University of Rochester, 1967; Ph.D., Northern Illinois University, 1972. (1981-)
- STEPHEN A. BAKER, Ph.D., Assistant Professor of Economics, B.A., Trent Polytechnic, Nottingham, 1976; Ph.D., York University, England, 1981. (1981-)
- ROBERT W. BAKER, Ph.D., Professor of Psychology; Director, Psychological Services Center. A.B., Hobart College, 1947; Ph.D., Clark University, 1953. (1954-)
- DAVID M. BEAR, M.D., Assistant Professor of Psychology (Affiliate). B.A., Harvard University, 1965; M.D., Harvard Medical School, 1971. (1978-)
- JAMES F. BEARD JR., Ph.D., Professor of English. A.B., Columbia College, 1940; A.M., Columbia University, 1941; Ph.D., Princeton University, 1949. (1955-)
- LAURENCE BERLOWITZ, Ph.D., Professor of Biochemistry in Department of Biology; A.B., University of California, Berkeley, 1954; M.A., University of California, Los Angeles, 1958; Ph.D., University of California, Berkeley, 1965. (1981-)
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